



Invitation to Bid (ITB) D233040 FM32361

ITD Caldwell Maintenance BLDG Fire Sprinkler

IDAHO TRANSPORTATION DEPARTMENT

**District 3
15430 Highway 44
Caldwell, ID 83605**

Date of Issuance: June 12th, 2023

Administrative Information

ITB Title:	ITD Maintenance BLDG Fire Sprinkler
ITB Lead:	Travis Frei, Facilities Management Contracting Officer Idaho Transportation Department 11331 W Chinden Blvd., Bld. 8 Boise, Idaho 83714 E-mail: travis.frei@itd.idaho.gov Phone: (208) 334-8622
Submit sealed bid: 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.	Address for Couriers/Physical Address 11331 W Chinden Blvd., Bld. 8 Boise, Idaho 83714 Mailing Address PO Box 11 Boise, Idaho 83707
ITB Closing Date:	01:59:50 PM (MT) on June 26, 2023
ITB Opening Date:	02:00 PM (MT) on June 26, 2023 Idaho Transportation Department 11331 W. Chinden BLVD, BLDG 8 Boise, Idaho 83714

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ADVERTISEMENT FOR BIDS

In accordance with Idaho Code 67-5711, The Idaho Transportation Department will accept sealed bids for Project # **D233040 ITD Caldwell Maintenance BLDG Fire Sprinkler FM32361**. Bid packets will be accepted at the Idaho Transportation Department at 11331 W Chinden Blvd., Bld. 8, Boise, Idaho 83714, June 26th, 2023 until 01:59:59PM. 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 include a complete new fire sprinkler system as part of the Caldwell Maintenance Building improvements and expansion project. The existing building and new additional space consist of 15,192 sf of vehicle maintenance bays, and office, conference room and break room space. The new fire sprinkler system will include all wet piping, heads, and fire riser as per the plans and specifications. Fire line water supply will be by others.

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

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 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 for the main project is estimated to take no more than 221 consecutive calendar days. The contract time shall be 221 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 \$850.00 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 **June 26th, 2023 at 01:59:59PM (MT)**. 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 which is the local time in Boise, Idaho.

BID OPENING DATE: Idaho Transportation Department will open acceptable bids **on June 26th, 2023 at 02:00PM (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 Monday, June 12th, 2023, in the Idaho Statesman Press.

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 STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR (AIA-A132), and GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION (AIA-A232).

PRE-BID CONFERENCE: An on-site pre-bid conference will not be held, however, bidders may visit the site on their own time to get firsthand knowledge of the existing field conditions, topography, and constraints. Bidders must check in with Andersen Construction at the job trailer, as the site is under active construction. 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.

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.

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
Travis Frei/Facility Management
11331 W Chinden Blvd.,
Bld. 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.

LABOR REQUIREMENTS: This Project is subject to the provisions of Sections 44-1001 and 44-1002, Idaho Code, dealing with labor preference.

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.

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: **D233040, ITD Caldwell Maintenance Building Improvements.**"

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 receipt.

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

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 FM32361, ITD Maintenance BLDG Fire Sprinkler 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 (221) consecutive calendar days thereafter, as stipulated in the specifications. Bidder further agrees to pay as liquidated damages, the sum of \$250.00 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)

Scope of Work

BP-16 FM32361 Fire Sprinkler

Provide all labor, materials and equipment necessary to furnish and install a complete fire sprinkler system to include all piping, heads, and fire riser.

This bid package includes, but is not limited to the following:

- **Design/Engineer a fire suppression system to be submitted as a deferred submittal and approved by governing agencies. Includes permit submission and any associated fees.**
- **Subcontractor is responsible to provide all design, engineering, materials, labor, supervision, and equipment necessary for a complete Fire Protection Scope of Work (Division 21), in strict accordance with the approved plans and specifications, and per current local jurisdiction fire code.**
- **The intent is that the contract documents provide a fully engineered system. This subcontractor to provide all supplemental engineering, as required, to provide a complete system.**
- **Drain and FDC connections to be coordinated with Owner.**
- **Coordinate with other trades for installation of fire riser in the fire riser room.**
- **Design system around lights and other architectural features shown.**
- **Coordinate with the Utility contractor to install the fire lines from the main to the buildings. Utility contractor to bring line within 5 feet of building.**
- **Access panels for fire suppression scope are included.**
- **Include all daily cleanup of this subcontractor's scope of work, materials, packaging, trash, unused scrapped material, created by this subcontractor from installation of this work.**
- **Provide all coordination with other trades and attend all coordination meetings hosted by Andersen Construction.**
- **Contractor to supply the tamper and flow switches, electrician to wire them to the fire monitoring system.**
- **All required sleeving**

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: _____

Add the sum of _____ Dollars (\$ _____)

Alternate No. 2: _____

Add the sum of _____ Dollars (\$ _____)

Alternate No. 3: _____

Add the sum of _____ Dollars (\$ _____)

Alternate No. 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.

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)

(Street or PO Address)

(City, State and zip code)

(Authorized Signature)

(Title)

(Telephone Number)

(FAX Number)

(Email Address)

SEAL

(Seal - if bid is by a corporation)

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: D233040 FM32361 ITD Maintenance BLDG Fire Sprinkler

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

DRAFT AIA® Document A132™ - 2019

Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month, and year.)

BETWEEN the Owner:
(Name, legal status, address, and other information)

« Idaho Transportation Department »« »
« 11331 W Chinden Blvd., Bld. 8 »
« Boise, Idaho 83714 »
« »

and the Contractor:
(Name, legal status, address, and other information)

« »« »
« »
« »
« »

for the following Project:
(Name, location, and detailed description)

« ITD Caldwell Maintenance BLDG Fire Sprinkler
« 15430 Highway 44 »
« Caldwell, Idaho 83605 »

The Construction Manager:
(Name, legal status, address, and other information)

« Andersen Construction Company of Idaho, LLC »« »
« 12552 W Executive Dr. »
« Boise, Idaho 83713 »
« »

The Architect:
(Name, legal status, address, and other information)

« CSHQA, Inc. »« »
« 200 Broad Street »
« Boise, Idaho 83702 »
« »

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Documents A232™-2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition; B132™-2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™-2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser. AIA Document A232™-2019 is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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EXHIBIT A INSURANCE AND BONDS

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ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND DATES OF SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

The date of this Agreement.

A date set forth in a notice to proceed issued by the Owner.

Established as follows:

(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion of the Project or Portions Thereof

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the date of Substantial Completion of the Work of all of the Contractors for the Project will be:

(Insert the date of Substantial Completion of the Work of all Contractors for the Project.)

« »

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work of all of the Contractors for the Project are to be completed prior to Substantial Completion of the entire Work of all of the Contractors for the Project, the Contractors shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 3.4 When the Work of this Contract, or any Portion Thereof, is Substantially Complete

§ 3.4.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall substantially complete the entire Work of this Contract:

(Check one of the following boxes and complete the necessary information.)

Not later than « » (« ») calendar days from the date of commencement of the Work.

By the following date: « »

§ 3.4.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work of this Contract are to be substantially complete prior to when the entire Work of this Contract shall be substantially complete, the Contractor shall substantially complete such portions by the following dates:

Portion of Work	Date to be substantially complete

§ 3.4.3 If the Contractor fails to substantially complete the Work of this Contract, or portions thereof, as provided in this Section 3.4, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor’s performance of the Contract. The Contract Sum shall be one of the following:

(Check the appropriate box.)

Stipulated Sum, in accordance with Section 4.2 below

Cost of the Work plus the Contractor’s Fee, in accordance with Section 4.3 below

Cost of the Work plus the Contractor’s Fee with a Guaranteed Maximum Price, in accordance with Section 4.4 below

(Based on the selection above, complete Section 4.2, 4.3 or 4.4 below.)

§ 4.2 Stipulated Sum

§ 4.2.1 The Contract Sum shall be « » (\$ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2.2 Alternates

§ 4.2.2.1 Alternates, if any, included in the Contract Sum:

Item	Price

§ 4.2.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. (Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

§ 4.2.3 Allowances, if any, included in the Contract Sum: (Identify each allowance.)

Item	Price

§ 4.2.4 Unit prices, if any: (Identify the item and state the unit price, and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)

§ 4.3 Cost of the Work Plus Contractor's Fee without a Guaranteed Maximum Price

§ 4.3.1 The Cost of the Work is as defined in Exhibit B, Determination of the Cost of the Work.

§ 4.3.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee.)

« »

§ 4.3.3 The method of adjustment of the Contractor's Fee for changes in the Work:

« »

§ 4.3.4 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

« »

§ 4.3.5 Rental rates for Contractor-owned equipment shall not exceed « » percent (« » %) of the standard rental rate paid at the place of the Project.

§ 4.3.6 Unit prices, if any:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)

§ 4.3.7 The Contractor shall prepare and submit to the Construction Manager, within 14 days of executing this Agreement, a written Control Estimate for the Owner's review and approval. The Control Estimate shall include the items in Section B.1 of Exhibit B, Determination of the Cost of the Work.

§ 4.4 Cost of the Work Plus Contractor's Fee with a Guaranteed Maximum Price

§ 4.4.1 The Cost of the Work is as defined in Exhibit B, Determination of the Cost of the Work.

§ 4.4.2 The Contractor's Fee:
(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee.)

<< >>

§ 4.4.3 The method of adjustment of the Contractor's Fee for changes in the Work:

<< >>

§ 4.4.4 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

<< >>

§ 4.4.5 Rental rates for Contractor-owned equipment shall not exceed << >> percent (<< >> %) of the standard rental rate paid at the place of the Project.

§ 4.4.6 Unit Prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
------	-----------------------	-------------------------

§ 4.4.7 Guaranteed Maximum Price

§ 4.4.7.1 The Contract Sum is guaranteed by the Contractor not to exceed << >> (\$ << >>), subject to additions and deductions by Change Order as provided in the Contract Documents. This maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.

§ 4.4.7.2 Alternates

§ 4.4.7.2.1 Alternates, if any, included in the Guaranteed Maximum Price:

Item	Price
------	-------

§ 4.4.7.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
------	-------	---------------------------

§ 4.4.7.3 Allowances, if any, included in the Guaranteed Maximum Price:
(Identify each allowance.)

Item	Price
------	-------

§ 4.4.7.4 Assumptions, if any, upon which the Guaranteed Maximum Price is based:
(Identify each assumption.)

<< >>

§ 4.4.8 To the extent that the Contract Documents are anticipated to require further development, the Guaranteed Maximum Price includes the costs attributable to such further development consistent with the Contract Documents

and reasonably inferable therefrom. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes, or equipment, all of which, if required, shall be incorporated by Change Order.

§ 4.4.9 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in Section 4.4.7.4. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the agreed-upon assumptions contained in Section 4.4.7.4 and the revised Contract Documents.

§ 4.5 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any, to be assessed in accordance with Section 3.4.)

« »

§ 4.6 Other:

(Insert provisions for bonus, cost savings or other incentives, if any, that might result in a change to the Contract Sum.)

« »

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Construction Manager by the Contractor, and Certificates for Payment issued by the Construction Manager and Architect, the Owner shall make progress payments on account of the Contract Sum, to the Contractor, as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« Payments for services shall be made monthly in proportion to services performed. Idaho Transportation Department will render payment for a properly executed invoice according to Idaho Code 67-2302 from the date of the invoice for pay items accepted by Idaho Transportation Department. »

§ 5.1.3 Provided that an Application for Payment is received by the Construction Manager not later than the « 25th » day of a month. The Owner shall make payment of the certified amount in the Application for Payment to the Contractor according to Idaho Code 67-2302.

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Progress Payments Where the Contract Sum is Based on a Stipulated Sum

§ 5.1.4.1 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Construction Manager and Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.4.2 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.4.3 In accordance with AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.4.3.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and

- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.4.3.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232–2019;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232–2019; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.5 Progress Payments Where the Contract Sum is Based on the Cost of the Work without a Guaranteed Maximum Price

§ 5.1.5.1 With each Application for Payment, the Contractor shall submit the cost control information required in Exhibit B, Determination of the Cost of the Work, along with payrolls, petty cash accounts, receipted invoices, or invoices with check vouchers attached, and any other evidence required by the Owner, Construction Manager or Architect to demonstrate that payments already made by the Contractor on account of the Cost of the Work equal or exceed progress payments already received by the Contractor, plus payrolls for the period covered by the present Application for Payment, less that portion of the payments attributable to the Contractor's Fee.

§ 5.1.5.2 Applications for Payment shall show the Cost of the Work actually incurred by the Contractor through the end of the period covered by the Application for Payment and for which the Contractor has made or intends to make actual payment prior to the next Application for Payment.

§ 5.1.5.3 In accordance with AIA Document A232-2019 and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.5.3.1 The amount of each progress payment shall first include:

- .1 The Cost of the Work as described in Exhibit B, Determination of the Cost of the Work;
- .2 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified; and
- .3 The Contractor's Fee computed upon the Cost of the Work described in the preceding Section 5.1.5.3.1.1 at the rate stated in Section 4.3.2; or if the Contractor's Fee is stated as a fixed sum in Section 4.3.2 an amount which bears the same ratio to that fixed-sum Fee as the Cost of the Work included in Section 5.1.5.3.1.1 bears to a reasonable estimate of the probable Cost of the Work upon its completion.

§ 5.1.5.3.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232–2019;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232–2019;
- .5 The shortfall, if any, indicated by the Contractor in the documentation required by Section 5.1.5.1 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and
- .6 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.5.4 The Owner, Construction Manager and Contractor shall agree upon a mutually acceptable procedure for review and approval of payments to Subcontractors and the percentage of retainage held on Subcontracts, and the Contractor shall execute subcontracts in accordance with those agreements.

§ 5.1.5.5 In taking action on the Contractor's Applications for Payment, the Construction Manager and Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor, and such action shall not be deemed to be a representation that (1) the Construction Manager and Architect have made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with Article 5 or other supporting data; (2) that the Construction Manager and Architect have made exhaustive or continuous on-site inspections; or (3) that the Construction Manager and Architect have made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 5.1.5.6 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.1.5.7 If final completion of the Work is materially delayed through no fault of the Contractor, then the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A232-2019.

§ 5.1.6 Progress Payments Where the Contract Sum is Based on the Cost of the Work with a Guaranteed Maximum Price

§ 5.1.6.1 With each Application for Payment, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner, Construction Manager or Architect to demonstrate that payments already made by the Contractor on account of the Cost of the Work equal or exceed progress payments already received by the Contractor plus payrolls for the period covered by the present Application for Payment, less that portion of the progress payments attributable to the Contractor's Fee.

§ 5.1.6.2 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Guaranteed Maximum Price among: (1) the various portions of the Work; (2) any contingency for costs that are included in the Guaranteed Maximum Price but not otherwise allocated to another line item or included in a Change Order; and (3) the Contractor's Fee.

§ 5.1.6.2.1 The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Construction Manager and Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.6.2.2 The allocation of the Guaranteed Maximum Price under this Section 5.1.6.2 shall not constitute a separate guaranteed maximum price for the Cost of the Work of each individual line item in the schedule of values.

§ 5.1.6.2.3 When the Contractor allocates costs from a contingency to another line item in the schedule of values, the Contractor shall submit supporting documentation to the Architect and Construction Manager.

§ 5.1.6.3 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. The percentage of completion shall be the lesser of (1) the percentage of that portion of the Work which has actually been completed; or (2) the percentage obtained by dividing (a) the expense that has actually been incurred by the Contractor on account of that portion of the Work and for which the Contractor has made payment or intends to make payment prior to the next Application for Payment by (b) the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values.

§ 5.1.6.4 In accordance with AIA Document A232-2019, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.4.1 The amount of each progress payment shall first include:

- .1 That portion of the Guaranteed Maximum Price properly allocable to completed Work as determined by multiplying the percentage of completion of each portion of the Work by the share of the Guaranteed Maximum Price allocated to that portion of the Work in the most recent schedule of values;
- .2 That portion of the Guaranteed Maximum Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction or, if approved in writing in advance by the Owner, suitably stored off the site at a location agreed upon in writing;
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified; and
- .4 The Contractor's Fee, computed upon the Cost of the Work described in the preceding Sections 5.1.6.4.1.1 and 5.1.6.4.1.2 at the rate stated in Section 4.4.2 or, if the Contractor's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum fee as the Cost of the Work included in Sections 5.1.6.4.1.1 and 5.1.6.4.1.2 bears to a reasonable estimate of the probable Cost of the Work upon its completion.

§ 5.1.6.4.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232-2019;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232-2019;
- .5 The shortfall, if any, indicated by the Contractor in the documentation required by Section 5.1.6.1 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and
- .6 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.6.5 The Owner and the Contractor shall agree upon a mutually acceptable procedure for review and approval of payments to Subcontractors and the percentage of retainage held on Subcontracts, and the Contractor shall execute subcontracts in accordance with those agreements.

§ 5.1.6.6 In taking action on the Contractor's Applications for Payment, the Construction Manager and Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor and such action shall not be deemed to be a representation that (1) the Construction Manager or Architect have made a detailed examination, audit, or arithmetic verification of the documentation submitted in accordance with Section 5.1.6.1 or other supporting data; (2) that the Construction Manager or Architect have made exhaustive or continuous on-site inspections; or (3) that the Construction Manager or Architect have made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract. Such examinations, audits, and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 5.1.6.7 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.1.6.8 If final completion of the Work is materially delayed through no fault of the Contractor, then the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A232-2019.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to when the Work of this Contract is substantially complete, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

<< >>

§ 5.1.7.1.1 The following items are not subject to retainage:

(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

<< >>

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

(If the retainage established in Section 5.1.7.1 is to be modified prior to when the entire Work of this Contract is substantially complete, including modifications for completion of portions of the Work as provided in Section 3.4.2, insert provisions for such modifications.)

<< >>

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, when the Work of this Contract is substantially complete, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted when the Work of this Contract is substantially complete shall not include retainage as follows:

(Insert any other conditions for release of retainage when the Work of this Contract is substantially complete, or upon Substantial Completion of the Work of all Contractors on the Project or portions thereof.)

<< >>

§ 5.2 Final Payment

§ 5.2.1 Final Payment Where the Contract Sum is Based on a Stipulated Sum

§ 5.2.1.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A232-2019, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 the Contractor has submitted a final accounting for the Cost of the Work, pursuant to Determination of the Cost of the Work when payment is on the basis of the Cost of the Work, with or without a Guaranteed Maximum payment; and
- .3 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect; such final payment shall be made by the Owner after the issuance of the final Certificate for Payment or Project Certificate for Payment, pursuant to the provision of Idaho Code 67-2302.

§ 5.2.1.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:

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§ 5.2.2 Final Payment Where the Contract Sum is Based on the Cost of the Work with or without a Guaranteed Maximum Price

§ 5.2.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A232-2019, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 the Contractor has submitted a final accounting for the Cost of the Work, pursuant to Exhibit B, Determination of the Cost of the Work and a final Application for Payment; and
- .3 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect in accordance with Exhibit B, Determination of the Cost of the Work.

§ 5.2.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:

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§ 5.3 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

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ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as Initial Decision Maker pursuant to Article 15 of AIA Document A232–2019, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

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ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 Where the Contract Sum is a Stipulated Sum

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2019.

§ 7.1.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A232–2019, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)

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§ 7.1.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2019.

§ 7.2

Where the Contract Sum is Based on the Cost of the Work with or without a Guaranteed Maximum Price

§ 7.2.1 Termination

§ 7.2.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2019.

§ 7.2.1.2 Termination by the Owner for Cause

§ 7.2.1.2.1 If the Owner terminates the Contract for cause as provided in Article 14 of AIA Document A232–2019, the Owner shall then only pay the Contractor an amount as follows:

- .1 Take the Cost of the Work incurred by the Contractor to the date of termination;
- .2 Add the Contractor’s Fee, computed upon the Cost of the Work to the date of termination at the rate stated in Section 4.3.2 or 4.4.2, as applicable, or, if the Contractor’s Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion;
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract the costs and damages incurred, or to be incurred, by the Owner under Article 14 of AIA Document A232–2019.

§ 7.2.1.2.2 When the Contract Sum is based on the Cost of the Work with a Guaranteed Maximum Price, if the Owner terminates the Contract for cause as provided in Article 14 of AIA Document A232-2019, the amount, if any, to be paid to the Contractor under Article 14 of AIA Document A232-2019 shall not cause the Guaranteed Maximum Price to be exceeded, nor shall it exceed the amount calculated in Section 7.2.1.2.1.

§ 7.2.1.2.3 The Owner shall also pay the Contractor fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Contractor that the Owner elects to retain and that is not otherwise included in the Cost of the Work under Section 7.2.1.2.1.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Contractor shall, as a condition of receiving the payments referred to in this Article 7, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Contractor, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor under such subcontracts or purchase orders. All Subcontracts, purchase orders and rental agreements entered into by the Contractor will contain provisions allowing for assignment to the Owner as described above.

§ 7.2.1.3 Termination by the Owner for Convenience

If the Owner terminates the Contract for convenience in accordance with Article 14 of AIA Document A232-2019, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of or method for determining the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)



§ 7.3 Suspension

The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232-2019; in such case, the Contract Sum and Contract Time shall be increased as provided in Article 14 of AIA Document A232-2019, except that the term "profit" shall be understood to mean the Contractor's Fee as described in Section 4.3.2 or 4.4.2, as applicable, of this Agreement.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A232-2019 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:

(Name, address, email address, and other information)



§ 8.3 The Contractor's representative:

(Name, address, email address, and other information)



§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A132™-2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A132™-2019, Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A232-2019, may be given in accordance with AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203-2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

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§ 8.7 Relationship of the Parties

Where the Contract is based on the Cost of the Work plus the Contractor’s Fee, with or without a Guaranteed Maximum Price, the Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor’s skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner’s interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.

§ 8.8 Other provisions:

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ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A132™-2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition
- .2 AIA Document A132™-2019, Exhibit A, Insurance and Bonds Exhibit
- .3 AIA Document A232™-2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition
- .4 AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

(Insert the date of the E203-2013 incorporated into this Agreement.)

« »

.5 Drawings

Number	Title	Date

.6 Specifications

Section	Title	Date	Pages

.7 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

AIA Document A132™–2019, Exhibit B, Determination of the Cost of the Work

AIA Document E235™–2019, Sustainable Projects Exhibit, Construction Manager as Adviser Edition, dated as indicated below:
(Insert the date of the E235-2019 incorporated into this Agreement.)

The Sustainability Plan:

Title	Date	Pages

Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A232–2019 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor’s bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

This Agreement is entered into as of the day and year first written above.

OWNER *(Signature)*

 « »

(Printed name and title)

CONTRACTOR *(Signature)*

 « »

(Printed name and title)

DRAFT AIA® Document A232® - 2019

General Conditions of the Contract for Construction, Construction Manager as Adviser Edition

for the following PROJECT:

(Name, and location or address)

« ITD Caldwell Maintenance BLDG Fire Sprinkler »
« 15430 Highway 44 »
« Caldwell, Idaho 83605 »

THE CONSTRUCTION MANAGER:

(Name, legal status, and address)

« Andersen Construction Company of Idaho, LLC »« »
« 12552 W Executive Dr. »
« Boise, Idaho 83713 »

THE OWNER:

(Name, legal status, and address)

« Idaho Transportation Department »« »
« 11331 W Chinden Blvd., Bld. 8 »
« Boise, Idaho 83714 »

THE ARCHITECT:

(Name, legal status, and address)

« CSHQA, Inc. »« »
« 200 Broad Street »
« Boise, Idaho 83702 »

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Documents A132™-2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132™-2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™-2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser.



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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents. The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract. The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their duties.

§ 1.1.3 The Work. 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. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project. The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by other Contractors, and by the Owner's own forces and Separate Contractors.

§ 1.1.5 Contractors. Contractors are persons or entities, other than the Contractor or Separate Contractors, who perform Work under contracts with the Owner that are administered by the Architect and Construction Manager.

§ 1.1.6 Separate Contractors. Separate Contractors are persons or entities who perform construction under separate contracts with the Owner not administered by the Architect and Construction Manager.

§ 1.1.7 The Drawings. The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.8 The Specifications. The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.9 Instruments of Service. Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.10 Initial Decision Maker. The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building

Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Construction Manager and the Architect do not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work, and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. Unless otherwise provided under the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 The Owner shall retain a construction manager adviser lawfully practicing construction management in the jurisdiction where the Project is located. That person or entity is identified as the Construction Manager in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.4 If the employment of the Construction Manager or Architect terminates, the Owner shall employ a successor construction manager or architect to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

§ 2.3.5 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.6 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.7 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3.8 The Owner shall forward all communications to the Contractor through the Construction Manager. Other communication shall be made as set forth in Section 4.2.6.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to review by the Construction Manager and prior approval of the Architect, and the Construction Manager or Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Construction Manager's and Architect's and their respective consultants' additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.5, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Construction Manager and Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information submitted to the Construction Manager in such form as the Construction Manager and Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Construction Manager and Architect any nonconformity discovered by or made known to the Contractor as a request for information submitted to Construction Manager in such form as the Construction Manager and Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner, the Construction Manager, and the Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent

for the completed construction. The Construction Manager shall review the proposed alternative for sequencing, constructability, and coordination impacts on the other Contractors. Unless the Architect or the Construction Manager objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of the Project already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect, in consultation with the Construction Manager, and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner, Construction Manager, and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Construction Manager or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices, and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit. The Contractor shall secure and pay for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner, Construction Manager, and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect and Construction Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect, in consultation with the Construction Manager, determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner, Construction Manager, and Contractor, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner, Construction Manager, and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents:

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect, through the Construction Manager, of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor, stating whether the Owner, the Construction Manager, or the Architect (1) has reasonable objection to the proposed superintendent or (2) require

additional time for review. Failure of the Construction Manager to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner, Construction Manager, or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information, and the Construction Manager's use in developing the Project schedule, a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other Contractors, or the construction or operations of the Owner's own forces or Separate Contractors.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Construction Manager's and Architect's approval. The Architect and Construction Manager's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Construction Manager and Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall participate with other Contractors, the Construction Manager, and the Owner in reviewing and coordinating all schedules for incorporation into the Project schedule that is prepared by the Construction Manager. The Contractor shall make revisions to the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project schedule.

§ 3.10.4 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner, Construction Manager, and Architect, and incorporated into the approved Project schedule.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Construction Manager, Architect, and Owner, and delivered to the Construction Manager for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data, and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed

in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect and Construction Manager is subject to the limitations of Sections 4.2.10 through 4.2.12. Informational submittals upon which the Construction Manager and Architect are not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Construction Manager or Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Construction Manager, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the Project submittal schedule approved by the Construction Manager and Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Contractors, Separate Contractors, or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples, and similar submittals with related documents submitted by other Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner, Construction Manager, and Architect, that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been reviewed and approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Construction Manager and Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Construction Manager and Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner, the Architect, and the Construction Manager shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with

information given and the design concept expressed in the Contract Documents. The Construction Manager shall review submittals for sequencing, constructability, and coordination impacts on other Contractors.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Construction Manager and Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner, Separate Contractors, or of other Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner, Separate Contractors, or by other Contractors except with written consent of the Construction Manager, Owner, and such other Contractors or Separate Contractors. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Separate Contractors, other Contractors, or the Owner, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner, or Construction Manager with the Owner's approval, may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner, Construction Manager, and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner, Construction Manager, and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner, Architect, or Construction Manager. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect through the Construction Manager.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Construction Manager, Architect, Construction Manager's and Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is

attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 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 Section 3.18.1 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' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT AND CONSTRUCTION MANAGER

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 The Construction Manager is the person or entity retained by the Owner pursuant to Section 2.3.3 and identified as such in the Agreement.

§ 4.1.3 Duties, responsibilities, and limitations of authority of the Construction Manager and Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Construction Manager, Architect, and Contractor. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be the Owner's representatives during construction until the date the Architect issues the final Certificate for Payment. The Construction Manager and Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of the site visits, the Architect will keep the Owner and the Construction Manager reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner and Construction Manager known deviations from the Contract Documents and defects and deficiencies observed in the Work.

§ 4.2.3 The Construction Manager shall provide one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work observed is being performed in accordance with the Contract Documents, will keep the Owner and Architect reasonably informed of the progress of the Work, and will promptly report to the Owner and Architect known deviations from the Contract Documents and the most recent Project schedule, and defects and deficiencies observed in the Work.

§ 4.2.4 The Construction Manager will schedule and coordinate the activities of the Contractor and other Contractors in accordance with the latest approved Project schedule.

§ 4.2.5 The Construction Manager, except to the extent required by Section 4.2.4, and Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge of, or be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work.

§ 4.2.6 Communications. The Owner shall communicate with the Contractor and the Construction Manager's consultants through the Construction Manager about matters arising out of or relating to the Contract Documents. The Owner and Construction Manager shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Construction Manager otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with other Contractors shall be through the Construction Manager. Communications by and with the Owner's own forces and Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.7 The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9.

§ 4.2.8 The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents, and will notify each other about the rejection. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, upon written authorization of the Owner, whether or not the Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons performing any of the Work.

§ 4.2.9 Utilizing the submittal schedule provided by the Contractor, the Construction Manager shall prepare, and revise as necessary, a Project submittal schedule incorporating information from other Contractors, the Owner, Owner's consultants, Owner's Separate Contractors and vendors, governmental agencies, and participants in the Project under the management of the Construction Manager. The Project submittal schedule and any revisions shall be submitted to the Architect for approval.

§ 4.2.10 The Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractor such as Shop Drawings, Product Data, and Samples. Where there are other Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from the Contractor and other Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Construction Manager represents to the Owner and Architect that the Construction Manager has reviewed and recommended them for approval. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

§ 4.2.11 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

§ 4.2.12 Review of the Contractor's submittals by the Construction Manager and Architect is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Construction Manager and Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Construction Manager and Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.13 The Construction Manager will prepare Change Orders and Construction Change Directives.

§ 4.2.14 The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7, and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.15 Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples, and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

§ 4.2.16 The Construction Manager will assist the Architect in conducting inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

§ 4.2.17 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Construction Manager of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.18 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of the Construction Manager, Owner, or Contractor through the Construction Manager. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.19 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions so rendered in good faith.

§ 4.2.20 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.21 The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing, through the Construction Manager, to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include other Contractors or Separate Contractors or the subcontractors of other Contractors or Separate Contractors.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract

Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Construction Manager, for review by the Owner, Construction Manager and Architect, of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor whether the Owner, the Construction Manager or the Architect (1) has reasonable objection to any such proposed person or entity or, (2) requires additional time for review. Failure of the Construction Manager to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner, Construction Manager or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner, Construction Manager or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, that the Contractor, by these Contract Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor Contractor or other entity. If the Owner assigns the subcontract to a successor Contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor Contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction with Own Forces and to Award Other Contracts

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When the Owner performs construction or operations with the Owner's own forces or Separate Contractors, the Owner shall provide for coordination of such forces and Separate Contractors with the Work of the Contractor, who shall cooperate with them.

§ 6.1.3 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner's own forces, Separate Contractors, Construction Manager and other Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner's own forces, Separate Contractors or other Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Construction Manager and Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor or other Contractors that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Construction Manager and the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's or other Contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractors or other Contractors that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a Separate Contractors or to other Contractors, because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of delays, improperly timed activities, damage to the Work or defective construction by the Owner's own forces, Separate Contractors, or other Contractors.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction, or to property of the Owner, Separate Contractors, or other Contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner, Separate Contractors, and other Contractors shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, other Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste

materials and rubbish, the Owner may clean up and the Construction Manager, with notice to the Architect, will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 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 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Construction Manager, Architect and Contractor. A Construction Change Directive requires agreement by the Owner, Construction Manager and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

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

§ 7.2 Change Orders

A Change Order is a written instrument prepared by the Construction Manager and signed by the Owner, Construction Manager, Architect, and Contractor, stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Construction Manager and signed by the Owner, Construction Manager and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum 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 Contract Sum and Contract Time being adjusted accordingly.

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

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one 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 Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Construction Manager shall determine the adjustment 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 Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Construction Manager may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Construction Manager and Architect;
- .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 premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Construction Manager 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 Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Construction Manager and Architect. 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.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to be reasonably justified. The interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Construction Manager and Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Construction Manager shall prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Construction Manager and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Construction Manager that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner, Architect, Construction Manager, or an employee of any of them, or of the Owner's own forces, Separate Contractors, or other Contractors; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts and the Architect, based on the recommendation of the Construction Manager, determines justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Construction Manager, before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Construction Manager and the Architect. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. The Construction Manager shall forward to the Architect the Contractor's schedule of values. Any changes to the schedule of values shall be submitted to the Construction Manager and supported by such data to substantiate its accuracy as the Construction Manager and the Architect may require, and unless objected to by the Construction Manager or the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least fifteen days before the date established for each progress payment, the Contractor shall submit to the Construction Manager an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner, Construction Manager or Architect require, such as copies of requisitions, and releases of waivers of lien from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Construction Manager and Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 Where there is only one Contractor, the Construction Manager will, within seven days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Certificate for Payment, in the full amount of the Application for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

§ 9.4.2 Where there is more than one Contractor performing portions of the Project, the Construction Manager will, within seven days after the Construction Manager receives all of the Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Contractor's application with information from similar applications for progress payments from the other Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

§ 9.4.2.1 Within seven days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Project Certificate for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Project Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Project Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.

§ 9.4.3 The Construction Manager's certification of an Application for Payment or, in the case of more than one Contractor, a Project Application and Certificate for Payment, shall be based upon the Construction Manager's evaluation of the Work and the data in the Application or Applications for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager's knowledge, information,

and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified.

§ 9.4.4 The Architect's issuance of a Certificate for Payment or, in the case of more than one Contractor, Project Application and Certificate for Payment, shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and data in the Application for Payment or Project Application for Payment. The Architect's certification will constitute a representation that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified.

§ 9.4.5 The representations made pursuant to Sections 9.4.3 and 9.4.4 are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Construction Manager or Architect.

§ 9.4.6 The issuance of a Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Construction Manager or Architect may withhold a Certificate for Payment or Project Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.3 and 9.4.4 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.2. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment or Project Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the acts and omissions described in Section 3.3.2 because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor or other Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect or Construction Manager withholds certification for payment under Section 9.5.1, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the

Owner makes payments by joint check, the Owner shall notify the Architect and the Construction Manager, and both will reflect such payment on the next Certificate for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment or Project Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Construction Manager and Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Construction Manager will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Owner, Construction Manager and Architect on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner, Construction Manager nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Construction Manager and Architect do not issue a Certificate for Payment or a Project Certificate for Payment, through no fault of the Contractor, within fourteen days after the Construction Manager's receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Construction Manager and Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall notify the Construction Manager, and the Contractor and Construction Manager shall jointly prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the list, the Architect, assisted by the Construction Manager, will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect, assisted by the Construction Manager, to determine Substantial Completion.

§ 9.8.4 When the Architect, assisted by the Construction Manager, determines that the Work of all of the Contractors, or designated portion thereof, is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall execute, a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor and Construction Manager shall jointly prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect after consultation with the Construction Manager.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Construction Manager, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon completion of the Work, the Contractor shall forward to the Construction Manager a notice that the Work is ready for final inspection and acceptance, and shall also forward to the Construction Manager a final

Contractor's Application for Payment. Upon receipt, the Construction Manager shall perform an inspection to confirm the completion of Work of the Contractor. The Construction Manager shall make recommendations to the Architect when the Work of all of the Contractors is ready for final inspection, and shall then forward the Contractors' notices and Application for Payment or Project Application for Payment, to the Architect, who will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment or Project Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Construction Manager's and Architect's final Certificate for Payment or Project Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Manager (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Construction Manager and Architect so confirm, the Owner shall, upon application by the Contractor and certification by the Construction Manager and Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect through the Construction Manager prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors. The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the

Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor;
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction; and
- .4 construction or operations by the Owner, Separate Contractors, or other Contractors.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner, Construction Manager and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing

the condition, immediately stop Work in the affected area and notify the Owner, Construction Manager and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor, Construction Manager and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor, the Construction Manager and the Architect will promptly reply to the Owner in writing stating whether or not any of them has reasonable objection to the persons or entities proposed by the Owner. If the Contractor, Construction Manager or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor, the Construction Manager and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Construction Manager, Architect, their consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Construction Manager and Construction Manager's consultants, and the Architect and Architect's consultants, shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds

from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 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 authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice directly to the Owner, and separately to the Construction Manager, of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform both the Contractor and the Construction Manager, separately and in writing, prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice directly to the Contractor, and separately to the Construction Manager, of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Construction Manager and Construction Manager's consultants; (3) the Architect and Architect's consultants; (4) other Contractors and any of their subcontractors, sub-subcontractors, agents, and employees; and (5) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Construction Manager,

Construction Manager's consultants, Architect, Architect's consultants, other Contractors, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor, Architect, and Construction Manager for loss of use of the Owner's property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Construction Manager, Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Construction Manager, Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Construction Manager's or Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by either, be uncovered for their examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Construction Manager or Architect has not specifically requested to examine prior to its being covered, the Construction Manager or Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Construction Manager or Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion, and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof, or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner, Construction Manager or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner, Separate Contractors, or other Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the

other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Construction Manager, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Construction Manager and Architect timely notice of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Construction Manager, Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Construction Manager and Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Construction Manager and Architect of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Construction Manager's and Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Construction Manager for transmittal to the Architect.

§ 13.4.5 If the Construction Manager or Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Construction Manager or Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Construction Manager has not certified or the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees, or any other persons performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, after consultation with the Construction Manager, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall, upon application, be certified by the Initial Decision Maker after consultation with the Construction Manager, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, 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.

§ 14.3.2 The Contract Sum and the Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. 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 this Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 **Definition.** A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Construction Manager and Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be

initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost. If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages. 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; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise,

or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties, the Construction Manager, and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days of receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to

file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

EXHIBIT A

LIST OF DRAWINGS:

General

G01 Title Sheet

Civil

C00 General Information Sheet
C10 Site Demolition Plan
C20 Erosion & Sediment Control Plan
C40 Site Improvement Plan

Architectural

A01 Energy Compliance
A11 Demolition Plans
A21 Floor Plans
A31 Roof And Reflected Ceiling Plan
A41 Restroom Plans
A51 Exterior Elevations
A52 Partial Building Sections
A61 Interior Finish Schedule & Millwork
A71 Details
A81 Door & Window Schedules

Structural

S1.0 General Structural Notes
S2.0 Foundation And Framing Plan
S3.0 Typical Foundation Details
S3.1 Foundation Details
S4.0 Typical Framing Details
S4.1 Framing Details

Fire Sprinkler

FS-01 Fire Sprinkler Plan
FS-02 Fire Sprinkler Details

HVAC

M01 Mechanical Cover Sheet
M02 Energy Code Compliance
M21 HVAC Plan
M41 Mechanical Schedules
M42 Mechanical Schedules
M51 Mechanical Details

Plumbing

P01 Plumbing Cover Sheet
P11 Waste And Vent Demolition Plan
P12 Water And Gas Demolition Plan
P21 Waste And Vent Plan
P22 Water And Gas Plan
P41 Plumbing Schedules
P51 Plumbing Details

Electrical

- E01 Electrical Symbols And Abbreviations
- E02A Electrical Symbols And Abbreviations
- E02B Sheet Specifications
- E03A Energy Compliance Forms
- E03B Energy Compliance Forms
- E04 Lighting Fixture And Control Schedule
- E06 Electrical Demo Plans
- E11 Lighting Plans
- E21 Power Plan
- E31 Mechanical Power Plan
- E70 Electrical Details
- E80 Existing Single Line Diagram And Schedules
- E81 Single Line Diagram And Schedules

LIST OF SPECIFICATIONS:

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

- 000101 – PROJECT TITLE PAGE*
- 000107 – SEALS PAGE*
- 000110 – TABLE OF CONTENTS*

DIVISION 01 – GENERAL REQUIREMENTS

- 011000 – SUMMARY*
- 012000 – PRICE AND PAYMENT PROCEDURES*
- 012500 – SUBSTITUTION PROCEDURES*
- 013000 – ADMINISTRATIVE REQUIREMENTS*
- 014000 – QUALITY REQUIREMENTS*
- 015000 – TEMPORARY FACILITIES AND CONTROLS*
- 016000 – PRODUCT REQUIREMENTS*
- 017000 – EXECUTION AND CLOSEOUT REQUIREMENTS*
- 017800 – CLOSEOUT SUBMITTALS*

DIVISION 02 – EXISTING CONDITIONS

- 024100 – DEMOLITION*

DIVISION 03 – CONCRETE

- 030100 – MAINTENANCE OF CONCRETE*
- 035400 – CAST UNDERLAYMENT*

DIVISION 04 – MASONRY (NOT USED)

DIVISION 05 – METALS

- 055000 – METAL FABRICATIONS*

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES

- 061053 – MISCELLANEOUS ROUGH CARPENTRY*

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

- 071900 – WATER REPELLENTS*
- 072100 – THERMAL INSULATION*
- 072500 – WEATHER BARRIERS*
- 074113 – METAL ROOF PANELS*
- 079200 – JOINT SEALANTS*

DIVISION 08 – OPENINGS

081113 – HOLLOW METAL DOORS AND FRAMES

087100 – DOOR HARDWARE

088000 – GLAZING

DIVISION 09 – FINISHES

092116 – GYPSUM BOARD ASSEMBLIES

099113 – EXTERIOR PAINTING

099123 – INTERIOR PAINTING

099600 – HIGH-PERFORMANCE COATINGS

DIVISION 10 – SPECIALTIES

102800 – TOILET, BATH, AND LAUNDRY ACCESSORIES

DIVISION 21 – Fire Sprinkler System

211313 – FIRE SPRINKLER SYSTEM

EXHIBIT B ANTICIPATED CONSTRUCTION SCHEDULE

ID	Task Name	Duration	Start	Finish	Sep '22	Oct '22	Nov '22	Dec '22	Jan '23	Feb '23	Mar '23	Apr '23	May '23	Jun '23	Jul '23	Aug '23	Sep '23	Oct '23	Nov '23	Dec '23	Jan '24	Feb '24	Mar '24	Apr '24
1	ITD Caldwell Maint. Bldg. Improvements	171.8 days	Thu 2/9/23	Wed 12/6/23	ITD Caldwell Maint. Bldg. Improvements																			
2	PreConstruction	49 days	Thu 2/9/23	Fri 5/5/23	PreConstruction																			
3	Contractor Bidding Period	12 days	Thu 2/9/23	Wed 3/1/23	2/9 Contractor Bidding Period																			
4	Contract Award Period	13 days	Thu 3/2/23	Fri 3/24/23	3/2 Contract Award Period																			
5	Material Procurement Period	24 days	Fri 3/24/23	Fri 5/5/23	3/24 Material Procurement Period																			
6	Project Permitting Period	24 days	Fri 3/24/23	Fri 5/5/23	3/24 Project Permitting Period																			
7	Construction	126 days	Mon 5/1/23	Wed 12/6/23	Construction																			
8	Mobilization & Temp Facilities	4 days	Mon 5/1/23	Mon 5/8/23	5/1 Mobilization & Temp Facilities																			
9	Sitework Demolition	6 days	Mon 5/8/23	Wed 5/17/23	5/8 Sitework Demolition																			
10	Building Demolition	14 days	Mon 5/8/23	Wed 5/31/23	5/8 Building Demolition																			
11	Install Sewer and Septic System	8 days	Wed 5/17/23	Wed 5/31/23	5/17 Install Sewer and Septic System																			
14	Excavate for Footings	1 day	Wed 5/31/23	Thu 6/1/23	5/31 Excavate for Footings																			
15	Place New Foundations	1 day	Fri 6/2/23	Mon 6/5/23	6/2 Place New Foundations																			
16	Rough-in Underslab MEPs	2 days	Mon 6/5/23	Wed 6/7/23	6/5 Rough-in Underslab MEPs																			
17	Underground Cover Inspections	1 day	Wed 6/7/23	Thu 6/8/23	6/7 Underground Cover Inspections																			
18	Prep for SOG	3 days	Fri 6/9/23	Wed 6/14/23	6/9 Prep for SOG																			
19	Place SOG	4 days	Wed 6/14/23	Wed 6/21/23	6/14 Place SOG																			
20	Erect Structural Steel	8 days	Wed 6/21/23	Wed 7/5/23	6/21 Erect Structural Steel																			
21	Erect Roofing Structure	8 days	Wed 7/5/23	Wed 7/19/23	7/5 Erect Roofing Structure																			
22	Frame New Walls & Openings	9 days	Wed 7/19/23	Thu 8/3/23	7/19 Frame New Walls & Openings																			
23	Install Exterior Envelope Systems	26 days	Fri 8/4/23	Tue 9/19/23	8/4 Install Exterior Envelope Systems																			
24	Rough-in Interior MEP Systems	10 days	Fri 8/18/23	Tue 9/5/23	8/18 Rough-in Interior MEP Systems																			
25	Interior Cover Inspections	2 days	Tue 9/5/23	Thu 9/7/23	9/5 Interior Cover Inspections																			
26	Hang and Finish Drywall	8 days	Fri 9/8/23	Thu 9/21/23	9/8 Hang and Finish Drywall																			
12	Prep Site Concrete	2 days	Tue 9/19/23	Thu 9/21/23	9/19 Prep Site Concrete																			
13	Prep and Pave Asphalt Paving	2 days	Tue 9/19/23	Thu 9/21/23	9/19 Prep and Pave Asphalt Paving																			

**EXHIBIT B
ANTICIPATED CONSTRUCTION SCHEDULE**

ID	Task Name	Duration	Start	Finish	Sep '22	Oct '22	Nov '22	Dec '22	Jan '23	Feb '23	Mar '23	Apr '23	May '23	Jun '23	Jul '23	Aug '23	Sep '23	Oct '23	Nov '23	Dec '23	Jan '24	Feb '24	Mar '24	Apr '24
27	Paint Walls	4 days	Fri 9/22/23	Thu 9/28/23													9/22	Paint Walls						
32	Pour Site Concrete	2 days	Fri 9/22/23	Tue 9/26/23													9/22	Pour Site Concrete						
28	Instal Ceiling Grid	3 days	Fri 9/29/23	Wed 10/4/23													9/29	Instal Ceiling Grid						
33	Install Interior Doors, Frames & Hardware	3 days	Fri 9/29/23	Wed 10/4/23													9/29	Install Interior Doors, Frames & Hardware						
29	Install Casework	4 days	Wed 10/4/23	Wed 10/11/23													10/4	Install Casework						
30	Install Owner Items	6 days	Wed 10/11/23	Mon 10/23/23													10/11	Install Owner Items						
31	Trim Out Interior MEPs	15 days	Wed 10/11/23	Tue 11/7/23													10/11	Trim Out Interior MEPs						
34	Final Inspections and Building Occupancy	5 days	Tue 11/7/23	Wed 11/15/23													11/7	Final Inspections and Building Occupancy						
35	Building System Commissioning	7 days	Tue 11/7/23	Mon 11/20/23													11/7	Building System Commissioning						
36	Punchlist Work and Final Paint	8 days	Mon 11/13/23	Mon 11/27/23													11/13	Punchlist Work and Final Paint						
37	Substantial Completion	1 day	Mon 11/27/23	Tue 11/28/23													11/27	Substantial Completion						
38	DeMobilization	5 days	Tue 11/28/23	Wed 12/6/23													11/28	DeMobilization						

EXHIBIT C
Site Logistics Plan

Steel & Material Lay Down Yard

Temp Fencing

Drive-Thru Gate

30 YD Roll Off Dumpster

Drive-Thru Gate

Construction Trade Parking



Temp Restrooms

Trade Trailer

Conex Containers

Andersen Trailer

Drive-Thru Gate

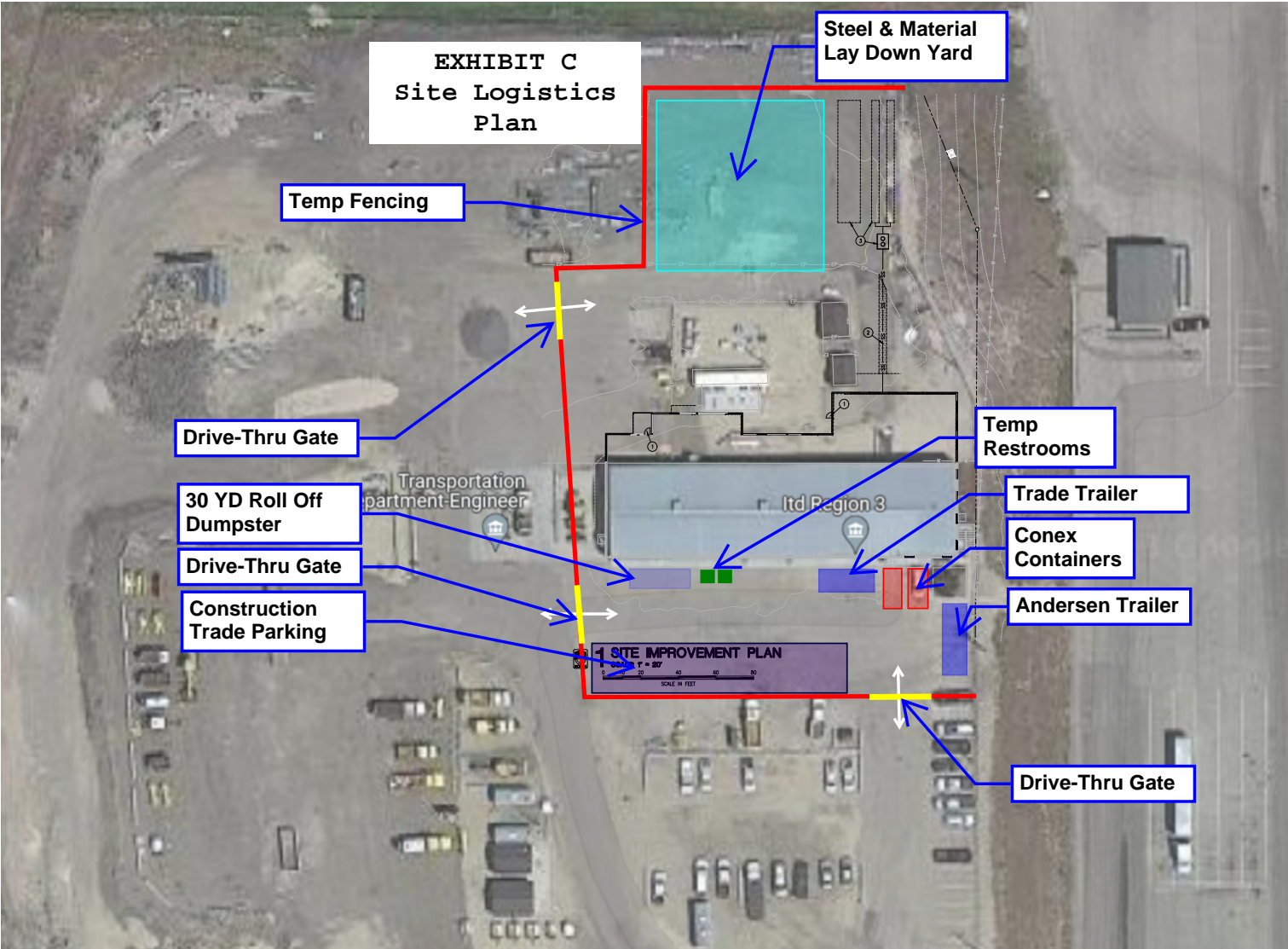


EXHIBIT D – INSURANCE REQUIRMENTS

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 \$1,000,000 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 \$2,000,000; 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.

EXHIBIT E

ATLAS

GEOTECHNICAL INVESTIGATION CALDWELL MAINTENANCE BUILDING EXPANSION

15430 Highway 44
Caldwell, ID

PREPARED FOR:

Mr. Travis Frei
Idaho Transportation Department
11331 West Chinden Boulevard, Building 8
Boise, ID 83714

PREPARED BY:

Atlas Technical Consultants, LLC
2791 South Victory View Way
Boise, ID 83709

December 2, 2022
B222379g



2791 South Victory View Way
Boise, ID 83709
(208) 376-4748 | oneatlas.com

December 2, 2022

Atlas No. B222379g

Mr. Travis Frei
Idaho Transportation Department
11331 West Chinden Boulevard, Building 8
Boise, ID 83714

**Subject: Geotechnical Investigation
Caldwell Maintenance Building Expansion
15430 Highway 44
Caldwell, ID**

Dear Mr. Frei:


In compliance with your instructions, Atlas has conducted a soils exploration and foundation evaluation for the above referenced development. Fieldwork for this investigation was conducted on November 2, 2022. Data have been analyzed to evaluate pertinent geotechnical conditions. Results of this investigation, together with our recommendations, are to be found in the following report. We have provided a PDF copy for your review and distribution.

Often, questions arise concerning soil conditions because of design and construction details that occur on a project. Atlas would be pleased to continue our role as geotechnical engineers during project implementation.


If you have any questions, please call us at (208) 376-4748.

Respectfully submitted,


Max Kasberger, EI
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Senior Geotechnical Engineer




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1. INTRODUCTION

This report presents results of a geotechnical investigation and analysis in support of data utilized in design of structures as defined in the 2018 International Building Code (IBC). Information in support of groundwater and stormwater issues pertinent to the practice of Civil Engineering is included. Observations and recommendations relevant to the earthwork phase of the project are also presented. Revisions in plans or drawings for the proposed addition from those enumerated in this report should be brought to the attention of the soils engineer to determine whether changes in the provided recommendations are required. Deviations from noted subsurface conditions, if encountered during construction, should also be brought to the attention of the soils engineer.

1.1 Project Description

The proposed development is northwest of the City of Caldwell, Canyon County, ID, and occupies portions of the SW $\frac{1}{4}$ SE $\frac{1}{4}$ and the SE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 4, Township 4 North, Range 3 West, Boise Meridian. This project will consist of construction of an addition on the east and north side of an existing structure. The addition will be comprised of office and shop area with a mezzanine level. Additionally, a small mechanic storage/office addition will be constructed on the north-central side of the structure. Total settlements are limited to 1 inch. Loads of up to 5,000 pounds per lineal foot for wall footings, and column loads of up to 100,000 pounds were assumed for settlement calculations. Additionally, assumptions have been made for traffic loading of pavements. Retaining walls are not anticipated as part of the project. Atlas has not been informed of the proposed grading plan.

1.2 Authorization

Authorization to perform this exploration and analysis was given in the form of a written authorization to proceed from Mr. Travis Frei of Idaho Transportation Department to Jacob Schlador of Atlas Technical Consultants (Atlas), October 19, 2022. Said authorization is subject to terms, conditions, and limitations described in the Professional Services Contract entered into between Idaho Transportation Department and Atlas.

1.3 Scope of Investigation

The scope of this investigation included review of geologic literature and existing available geotechnical studies of the area, visual site reconnaissance of the immediate site, subsurface exploration of the site, field and laboratory testing of materials collected, and engineering analysis and evaluation of foundation materials.

2. SITE DESCRIPTION

2.1 Site Access

Access to the site may be gained via Interstate 84 to the Highway 44 exit. Proceed west on Highway 44 approximately 820 feet to its intersection with the entrance road to the existing maintenance facility. The site occupies the northwest corner of this intersection. The location is depicted on site maps included in the **Appendix**.

2.2 Regional Geology

The project site is located within the western Snake River Plain of southwestern Idaho and eastern Oregon. The plain is a northwest trending rift basin, about 45 miles wide and 200 miles long, that developed about 14 million years ago (Ma) and has since been occupied sporadically by large inland lakes. Geologic materials found within and along the plain's margins reflect volcanic and fluvial/lacustrine sedimentary processes that have led to an accumulation of approximately 1 to 2 km of interbedded volcanic and sedimentary deposits within the plain. Along the margins of the plain, streams that drained the highlands to the north and south provided coarse to fine-grained sediments eroded from granitic and volcanic rocks, respectively. About 2 million years ago the last of the lakes was drained and since that time fluvial erosion and deposition has dominated the evolution of the landscape. The project site is underlain by "Basalt Flows of Indian Creek, Undivided" as mapped by Othberg and Stanford (1993). This volcanic deposit is composed of multiple flows of medium to dark gray olivine basalt. These flows erupted from numerous vents found south of the Boise River and north of the Snake River, southeast of the City of Boise, Idaho. At the time of eruption lavas flowed into and down ancestral Indian Creek and Boise River valleys. Northwest-trending, gently sloping escarpments suggest faulting of the basalt. These basalts are mantled with loess 2-12 feet thick that contains about 35% pedogenic clay and a duripan that can be 3 feet thick.

2.3 General Site Characteristics

The site to be redeveloped is an existing ITD maintenance and storage facility that comprises the southern two-thirds of an approximately 15.6-acre property. The northern third of the property is composed of farmland and no development is planned for this area. The site consists of a storage lot with a maintenance building located in the northeast portion of the site. The maintenance building features a paved parking lot to the south and fuel island to the west. Outbuildings and storage containers are present north of this building. A salt storage quonset is present in the southern portion of the site. Various stockpiles of soil and aggregate stored in ecology block containment areas are present throughout the site. The site is bounded to the west by the Notus Canal. A commercial building is present south of the site. To the north and west of the site lie agricultural land. East of the site are abandoned traffic scales and Interstate 84.

Vegetation on the site consists primarily of sparse native grasses. The proposed building addition location is generally flat and level; however, to the west of the existing structure the surface slopes downwards towards the canal with approximately 40 feet of elevation relief and is terraced. The salt storage area is also relatively flat and level, but slopes down toward Highway 44 to the south. This slope gradient is roughly 2 feet horizontal to 1 foot vertical and is approximately 10 to 15 feet tall.

Regional drainage is south and west toward the Boise River. Stormwater drainage for the site is achieved by both sheet runoff and percolation through surficial soils. Runoff predominates for the steeper slopes and paved areas while percolation prevails across the gently sloping and near level areas. From the east, intermittent off-site stormwater may drain onto the project site. Stormwater drainage collection and retention systems are not in place on the project site and were not noted within the vicinity of the project site.

2.4 Regional Site Climatology and Geochemistry

According to the Western Regional Climate Center, the average precipitation for the Treasure Valley is on the order of 10 to 12 inches per year, with an annual snowfall of approximately 20 inches and a range from 3 to 49 inches. The monthly mean daily temperatures range from 21°F to 95°F, with daily extremes ranging from roughly -25°F to 111°F. Winds are generally from the northwest or southeast with an annual average wind speed of approximately 9 miles per hour (mph) and a maximum of 62 mph. Soils and sediments in the area are primarily derived from siliceous materials and exhibit low electro-chemical potential for corrosion of metals or concretes. Local aggregates are generally appropriate for Portland cement and lime cement mixtures. Surface water, groundwater, and soils in the region typically have pH levels ranging from 7.2 to 8.2.

3. SEISMIC SITE EVALUATION

3.1 Geoseismic Setting

Soils on site are classed as Site Class D in accordance with Chapter 20 of the American Society of Civil Engineers (ASCE) publication ASCE/SEI 7-16. Structures constructed on this site should be designed per IBC requirements for such a seismic classification. Our investigation did not reveal hazards resulting from potential earthquake motions including: slope instability, liquefaction, and surface rupture caused by faulting or lateral spreading. Incidence and anticipated acceleration of seismic activity in the area is low.

3.2 Seismic Design Parameter Values

The United States Geological Survey National Seismic Hazard Maps (2008), includes a peak ground acceleration map. The map for 2% probability of exceedance in 50 years in the Western United States in standard gravity (g) indicates that a peak ground acceleration of 0.195 is appropriate for the project site based on a Site Class D.

The following section provides an assessment of the earthquake-induced earthquake loads for the site based on the Risk-Targeted Maximum Considered Earthquake (MCE_R). The MCE_R spectral response acceleration for short periods, S_{MS} , and at 1-second period, S_{M1} , are adjusted for site class effects as required by the 2018 IBC. Design spectral response acceleration parameters as presented in the 2018 IBC are defined as a 5% damped design spectral response acceleration at short periods, S_{DS} , and at 1-second period, S_{D1} .

The USGS National Seismic Hazards Mapping Project includes a program that provides values for ground motion at a selected site based on the same data that were used to prepare the USGS ground motion maps. The maps were developed using attenuation relationships for soft rock sites; the source model, assumptions, and empirical relationships used in preparation of the maps are described in Petersen and others (1996).

Table 1 – Seismic Design Values

Seismic Design Parameter	Design Value
Site Class	D "Default"
S_s	0.285 (g)
S_1	0.105 (g)
F_a	1.572
F_v	2.390
S_{MS}	0.448
S_{M1}	0.251
S_{DS}	0.298
S_{D1}	0.167

4. SOILS EXPLORATION

4.1 Exploration and Sampling Procedures

Field exploration conducted to determine engineering characteristics of subsurface materials included a reconnaissance of the project site and investigation by soil boring. Boring locations were provided via a site map by Travis Frei of ITD. Actual borings were located in the field by means of a Global Positioning System (GPS) device and are reportedly accurate to within ten feet. Borings were advanced by means of a truck-mounted drilling rig equipped with continuous flight hollow-stem augers. At specified depths, samples were obtained using a standard split-spoon sampler, and Standard Penetration Test (SPT) blow counts were recorded. Uncorrected SPT blow counts are provided on logs, which can be found in the **Appendix**. At completion of exploration, borings were backfilled with bentonite holeplug.

Samples have been visually classified in the field by professional staff, identified according to boring number and depth, placed in sealed containers, and transported to our laboratory for additional testing. Subsurface materials have been described in detail on logs provided in the **Appendix**. Results of field and laboratory tests are also presented in the **Appendix**. Atlas recommends that these logs **not** be used to estimate fill material quantities.

4.2 Laboratory Testing Program

Along with our field investigation, a supplemental laboratory testing program was conducted to determine additional pertinent engineering characteristics of subsurface materials necessary in an analysis of anticipated behavior of the proposed addition. Laboratory tests were conducted in accordance with current applicable American Society for Testing and Materials (ASTM) specifications, and results of these tests are to be found in the **Appendix**. The laboratory testing program for this report included: Atterberg Limits Testing – ASTM D4318 and Grain Size Analysis – ASTM C117/C136.

4.3 Soil and Sediment Profile

The profile below represents a generalized interpretation for the project site. Note that on site soils strata, encountered between boring locations, may vary from the individual soil profiles presented in the logs, which can be found in the **Appendix**.

Asphaltic concrete was noted at ground surface in boring 1. Silty gravel with sand fill materials were encountered below the asphalt, and silty sand with gravel fills were observed at ground surface in borings 2 and 3. Fill materials were brown to dark brown, dry to slightly moist, and loose to medium dense, with fine to coarse-grained sand and fine to coarse gravel.

Lean clay with sand soils were encountered below fill materials in borings 2 and 3. These soils were dark brown, dry to slightly moist, and medium stiff to stiff, with fine-grained sand. Silt with sand soils were observed beneath lean clays with sand in boring 3. These soils were light brown to brown, dry to slightly moist, and very stiff to hard, with fine-grained sand. Weak to moderate calcium carbonate cementation was encountered intermittently throughout this horizon.

At depth in borings 1 and 2, poorly graded sand with gravel sediments were exposed. Sediments in this horizon were light brown, dry to slightly moist, and loose to medium dense, with fine to coarse-grained sand and fine to coarse gravel. Basalt gravel/fractured basalt was encountered at depth in boring 3. Basalt gravels/fractured basalt were dark gray, completely to moderately weathered, very closely to moderately fractured, and friable to moderately strong.

During excavation, boring sidewalls were generally stable. However, moisture contents will affect wall competency with saturated soils having a tendency to readily slough when under load and unsupported.



4.4 Volatile Organic Scan

No environmental concerns were identified prior to commencement of the investigation. Therefore, soils obtained during on-site activities were not assessed for volatile organic compounds by portable photoionization detector. Samples obtained during our exploration activities exhibited no odors or discoloration typically associated with this type of contamination. No groundwater was encountered.

5. SITE HYDROLOGY

Existing surface drainage conditions are defined in the **General Site Characteristics** section. Information provided in this section is limited to observations made at the time of the investigation. Either regional or local ordinances may require information beyond the scope of this report.

5.1 Groundwater

During this field investigation, groundwater was not encountered in borings advanced to a maximum depth of 16.5 feet bgs. Soil moistures in the borings were generally dry to slightly moist throughout.

Atlas previously performed a geotechnical investigation approximately 0.39 mile west of the project site in January and February 2022. Groundwater was encountered in portions of the site from 19.5 to 24.0 feet bgs. It should be noted that this site is approximately 50 feet lower in elevation than the project site. Furthermore, according to United States Geological Survey (USGS) monitoring well data within approximately ½-mile of the project site, groundwater was measured at depths ranging between 69 and 73 feet bgs.

For construction purposes, groundwater depth can be assumed to remain greater than 20 feet bgs throughout the year.

5.2 Soil Infiltration Rates

Soil permeability, which is a measure of the ability of a soil to transmit a fluid, was not tested in the field. Given the absence of direct measurements, for this report an estimation of infiltration is presented using generally recognized values for each soil type and gradation. Of soils comprising the generalized soil profile for this study, lean clay with sand and silt with sand soils generally offer little permeability, with typical hydraulic infiltration rates of less than 2 inches per hour. However, the presence of cementation may reduce these values to near zero. Poorly graded sand with gravel sediments typically exhibit infiltration values in excess of 12 inches per hour. Infiltration rates through basalt rock can be highly variable, ranging from nearly zero to greater than 6 inches per hour in some cases. Movement of water through the basalt may be more characteristic of fracture flow.

Free draining poorly graded sand sediments were encountered in the northern portion of the site, while silt with sand soils were encountered in southern portion of the site. Atlas recommends that infiltration facilities constructed on the site be extended into native poorly graded sand sediments, encountered in the north portion of the site. Excavation depths ranging from approximately 2 to 7 feet bgs should be anticipated to expose these poorly graded sand sediments. Because of the high soil permeability, ASTM C33 filter sand, or equivalent, should be incorporated into design of infiltration facilities. An infiltration rate of 8 inches per hour should be used in design. Actual infiltration rates should be confirmed at the time of construction.

If infiltration facilities are planned for the southern portion of the site, Atlas recommends that infiltration testing be performed. However, for preliminary design purposes, an infiltration rate of 2 inches per hour can be assumed for infiltration in the southern portion of the site.

6. FOUNDATION AND SLAB DISCUSSION AND RECOMMENDATIONS

Various foundation types have been considered for support of the proposed addition. Two requirements must be met in the design of foundations. First, the applied bearing stress must be less than the ultimate bearing capacity of foundation soils to maintain stability. Second, total and differential settlement must not exceed an amount that will produce an adverse behavior of the superstructure. Allowable settlement is usually exceeded before bearing capacity considerations become important; thus, allowable bearing pressure is normally controlled by settlement considerations.

Considering subsurface conditions and the proposed construction, it is recommended that the structure be founded upon conventional spread footings and continuous wall footings. Total settlements should not exceed 1 inch if the following design and construction recommendations are observed. During exploration vertical cracking was noted throughout the northern stem walls of the existing structure. During construction care should be taken during construction to prevent undermining and further damaging the foundations.

6.1 Foundation Design Recommendations

Based on data obtained from the site and test results from various laboratory tests performed, Atlas recommends the following guidelines for the net allowable soil bearing capacity:

Table 2 – Soil Bearing Capacity

Footing Depth	ASTM D1557 Subgrade Compaction	Net Allowable Soil Bearing Capacity
Footings must bear on competent, undisturbed, native poorly graded sand with gravel sediments or compacted structural fill. Existing lean clay with sand soils and fill materials must be completely removed from below foundation elements. ¹ An excavation depth of roughly 1.0 foot bgs should be anticipated to expose proper bearing soils in the proposed building addition location. ² However, depths of up to 7 feet were required in other areas of the site to expose these bearing soils. Alternate recommendations can be provided upon request.	Not Required for Native Soil 95% for Structural Fill	3,000 lbs/ft ²

¹It will be required for Atlas personnel to verify the bearing soil suitability for each structure at the time of construction.

²Depending on the time of year construction takes place, the subgrade soils may be unstable because of high moisture contents. If unstable conditions are encountered, over-excavation and replacement with granular structural fill and/or use of geotextiles may be required.

The net allowable soil bearing capacity recommendations provided above do not take into account overlapping stresses that may occur from existing foundations. Additionally, care should be taken during construction to ensure that existing foundations are not undermined when placing any new structural elements.

The following sliding frictional coefficient values should be used: 1) 0.40 for footings bearing on native poorly graded sand with gravel sediments or 2) 0.45 for footings bearing on granular structural fill. For native soils, a passive lateral earth pressure of 418 pounds per square foot per foot (psf/ft) should be used for poorly graded sand with gravel sediments. For compacted sandy gravel fill, a passive lateral earth pressure of 496 psf/ft should be used.

Footings should be proportioned to meet either the stated soil bearing capacity or the 2018 IBC minimum requirements. Total settlement should be limited to approximately 1 inch, and differential settlement should be limited to approximately ½ inch. Objectionable soil types encountered at the bottom of footing excavations should be removed and replaced with structural fill. Excessively loose or soft areas that are encountered in the footings subgrade will require over-excavation and backfilling with structural fill. To minimize the effects of slight differential movement that may occur because of variations in the character of supporting soils and seasonal moisture content, Atlas recommends continuous footings be suitably reinforced to make them as rigid as possible. For frost protection, the bottom of external footings should be 30 inches below finished grade.

6.2 Floor Slab-on-Grade

Uncontrolled fill was encountered in portions of the site. Atlas recommends that these fill materials either be completely removed or be removed to a depth of at least 1½ feet below existing grade. If fill materials remain after excavation, the exposed subgrade must be compacted to at least 95 percent of the maximum dry density as determined by ASTM D1557. The excavated fill materials can be replaced in accordance with the **Structural Fill** section provided that all organic material and/or debris is completely removed. Once final grades have been determined, Atlas is available to provide additional recommendations.

Organic, loose, or obviously compressive materials must be removed prior to placement of concrete floors or floor-supporting fill. In addition, the remaining subgrade should be treated in accordance with guidelines presented in the **Earthwork** section. Areas of excessive yielding should be excavated and backfilled with structural fill. Fill used to increase the elevation of the floor slab should meet requirements detailed in the **Structural Fill** section. Fill materials must be compacted to a minimum 95 percent of the maximum dry density as determined by ASTM D1557.

A free-draining granular mat should be provided below slabs-on-grade to provide drainage and a uniform and stable bearing surface. This should be a minimum of 4 inches in thickness and properly compacted. The mat should consist of a sand and gravel mixture, complying with Idaho Standards for Public Works Construction (ISPWC) specifications for ¾-inch (Type 1) crushed aggregate. The granular mat should be compacted to no less than 95 percent of the maximum dry density as determined by ASTM D1557. A moisture-retarder should be placed beneath floor slabs to minimize potential ground moisture effects on moisture-sensitive floor coverings. The moisture-retarder should be at least 15-mil in thickness and have a permeance of less than 0.01 US perms as determined by ASTM E96. Placement of the moisture-retarder will require special consideration with regard to effects on the slab-on-grade and should adhere to recommendations outlined in the ACI 302.1R and ASTM E1745 publications. Upon request, Atlas can provide further consultation regarding installation.

7. PAVEMENT DISCUSSION AND RECOMMENDATIONS

Atlas has made assumptions for traffic loading variables based on the character of the proposed construction. The Client shall review and understand these assumptions to make sure they reflect intended use and loading of pavements both now and in the future. Based on experience with soils in the region, a subgrade California Bearing Ratio (CBR) value of 4 has been assumed for near-surface lean clay with sand soils on site. The following are minimum thickness requirements for assured pavement function. Depending on site conditions, additional work, e.g. soil preparation, may be required to support construction equipment. These have been listed within the **Soft Subgrade Soils** section.

7.1 Flexible Pavement Sections

The American Association of State Highway and Transportation Officials (AASHTO) design method has been used to calculate the following pavement sections. Calculation sheets provided in the **Appendix** indicate the soils constant, traffic loading, traffic projections, and material constants used to calculate the pavement sections. Atlas recommends that materials used in the construction of asphaltic concrete pavements meet requirements of the ISPWC Standard Specification for Highway Construction. Construction of the pavement section should be in accordance with these specifications and should adhere to guidelines recommended in the section on **Construction Considerations**.

Table 3 – AASHTO Flexible Pavement Specifications

Pavement Section Component	Driveways and Parking Light Duty	Driveways and Parking Heavy Duty
Asphaltic Concrete	2.5 Inches	3.0 Inches
Crushed Aggregate Base	4.0 Inches	4.0 Inches
Structural Subbase	10.0 Inches	16.0 Inches
Compacted Subgrade	See Pavement Subgrade Preparation Section	See Pavement Subgrade Preparation Section

¹It will be required for Atlas personnel to verify subgrade competency at the time of construction.

- Asphaltic Concrete: Asphalt mix design shall meet the requirements of ISPWC, Section 810. Materials shall be placed in accordance with ISPWC Standard Specifications for Highway Construction.
- Aggregate Base: Material complying with ISPWC Standards for Crushed Aggregate Materials.
- Structural Subbase: Granular structural fill material complying with the requirements detailed in the **Structural Fill** section of this report except that the maximum material diameter is no more than $\frac{2}{3}$ the component thickness. Gradation and suitability requirements shall be per ISPWC Section 801, Table 1.

7.2 Rigid Pavement Section

The AASHTO pavement design method was used to develop the following rigid concrete pavement section. Traffic loading and subgrade values indicated in the flexible pavement design were used in developing the rigid section. This design method assumes the use of dowels at transverse joints. Concrete pavement shall be batched and constructed in accordance with the most current American Concrete Institute Standards and in accordance with Idaho Transportation Department Standard Drawings 411-1 and 409-1. Native subgrade soils on the site are frost susceptible, and therefore, require joint sealers or under-drains.

Table 4 – AASHTO Rigid Pavement Specifications

Pavement Section Component	Driveways and Parking Heavy Duty
Portland Cement Concrete	6.0 Inches
Crushed Aggregate Base	6.0 Inches
Structural Subbase	Not Required
Compacted Subgrade	See Pavement Subgrade Preparation Section

¹It will be required for Atlas personnel to verify subgrade competency at the time of construction.

- Portland Cement Concrete: 4,000 psi concrete with a modulus of rupture greater than 650 psi generally complying with ITD requirement for Urban Concrete.
- Aggregate Base: Material complying with ITD Standard Specifications for Highway Construction Sections 303 and 703 for aggregates.
- Structural Subbase: Granular structural fill material complying with the requirements detailed in the **Structural Fill** section of this report except that the maximum material diameter is no more than $\frac{2}{3}$ the component thickness. Gradation and suitability requirements shall be per ISPWC Section 801, Table 1.

7.3 Pavement Subgrade Preparation

Uncontrolled fill, was encountered in portions of the site. Atlas recommends that these fill materials either be completely removed or be removed to a depth of at least 1½ feet below existing grade. If fill materials remain after excavation, the exposed subgrade must be compacted to at least 95 percent of the maximum dry density as determined by ASTM D698 for flexible pavements and ASTM D1557 for rigid pavements. The excavated fill materials can be replaced in accordance with the **Structural Fill** section provided that all organic material and/or debris is completely removed. However, the existing fill materials are not suitable for use as either the base or subbase components of the recommended pavement section. Once final grades have been determined, Atlas is available to provide additional recommendations.

7.4 Common Pavement Section Construction Issues

The subgrade upon which above pavement sections are to be constructed must be properly stripped, compacted (if indicated), inspected, and proof-rolled. Proof rolling of subgrade soils should be accomplished using a heavy rubber-tired, fully loaded, tandem-axle dump truck or equivalent. Verification of subgrade competence by Atlas personnel at the time of construction is required. Fill materials on the site must demonstrate the indicated compaction prior to placing material in support of the pavement section. Atlas anticipated that pavement areas will be subjected to moderate traffic. Subgrade clayey and silty soils near and above optimum moisture contents may pump during compaction. Pumping or soft areas must be removed and replaced with structural fill.

Fill material and aggregates, as well as compacted native subgrade soils, in support of the pavement section must be compacted to no less than 95 percent of the maximum dry density as determined by ASTM D698 for flexible pavements and by ASTM D1557 for rigid pavements. If a material placed as a pavement section component cannot be tested by usual compaction testing methods, then compaction of that material must be approved by observed proof rolling. Minor deflections from proof rolling for flexible pavements are allowable. Deflections from proof rolling of rigid pavement support courses should not be visually detectable.

Atlas recommends that rigid concrete pavement be provided for heavy garbage receptacles. This will eliminate damage caused by the considerable loading transferred through the small steel wheels onto asphaltic concrete. Rigid concrete pavement should consist of Portland Cement Concrete Pavement (PCCP) generally adhering to ITD specifications for Urban Concrete. PCCP should be 6 inches thick on a 4-inch drainage fill course (see **Floor Slab-on-Grade** section), and should be reinforced with welded wire fabric. Control joints must be on 12-foot centers or less.

8. CONSTRUCTION CONSIDERATIONS

Recommendations in this report are based upon structural elements of the project being founded on competent, poorly graded sand with gravel sediments, or compacted structural fill. Structural areas should be stripped to an elevation that exposes these soil types.

8.1 Earthwork

Excessively organic soils, deleterious materials, or disturbed soils generally undergo high volume changes when subjected to loads, which is detrimental to subgrade behavior in the area of pavements, floor slabs, structural fills, and foundations. Thick grasses with associated root systems were noted at the time of our investigation. It is recommended that organic or disturbed soils, if encountered, be removed to depths of 1 foot (minimum), and wasted or stockpiled for later use. However, in areas where trees were present, deeper excavation depths should be anticipated. Stripping depths should be adjusted in the field to assure that the entire root zone or disturbed zone or topsoil are removed prior to placement and compaction of structural fill materials. Exact removal depths should be determined during grading operations by Atlas personnel, and should be based upon subgrade soil type, composition, and firmness or soil stability. If underground storage tanks, underground utilities, wells, or septic systems are discovered during construction activities, they must be decommissioned then removed or abandoned in accordance with governing Federal, State, and local agencies. Excavations developed as the result of such removal must be backfilled with structural fill materials as defined in the **Structural Fill** section.

Atlas should oversee subgrade conditions (i.e., moisture content) as well as placement and compaction of new fill (if required) after native soils are excavated to design grade. Recommendations for structural fill presented in this report can be used to minimize volume changes and differential settlements that are detrimental to the behavior of footings, pavements, and floor slabs. Sufficient density tests should be performed to properly monitor compaction. For structural fill beneath building structures, one in-place density test per lift for every 5,000 square feet is recommended. In parking and driveway areas, this can be decreased to one test per lift for every 10,000 square feet.

8.2 Dry Weather

If construction is to be conducted during dry seasonal conditions, many problems associated with soft soils may be avoided. However, some rutting of subgrade soils may be induced by shallow groundwater conditions related to springtime runoff or irrigation activities during late summer through early fall. Solutions to problems associated with soft subgrade soils are outlined in the **Soft Subgrade Soils** section. Problems may also arise because of lack of moisture in native and fill soils at time of placement. This will require the addition of water to achieve near-optimum moisture levels. Low-cohesion soils exposed in excavations may become friable, increasing chances of sloughing or caving. Measures to control excessive dust should be considered as part of the overall health and safety management plan.

8.3 Wet Weather

If construction is to be conducted during wet seasonal conditions (commonly from mid-November through May), problems associated with soft soils must be considered as part of the construction plan. During this time of year, fine-grained soils such as silts and clays will become unstable with increased moisture content, and eventually deform or rut. Additionally, constant low temperatures reduce the possibility of drying soils to near optimum conditions.

8.4 Soft Subgrade Soils

Shallow fine-grained subgrade soils that are high in moisture content should be expected to pump and rut under construction traffic. Throughout construction, soft areas may develop after the existing asphalt is removed and heavy rubber tired equipment drives over the site. In addition, areas where significant cracking has occurred will likely have soft subgrade soils because of moisture infiltration and will be prone to pumping and rutting. During periods of wet weather, construction may become very difficult if not impossible. The following recommendations and options have been included for dealing with soft subgrade conditions:

- Track-mounted vehicles should be used to strip the subgrade of root matter and other deleterious debris and be used to remove the existing asphalt and to perform any other necessary excavations. Heavy rubber-tired equipment should be prohibited from operating directly on the native subgrade and areas in which structural fill materials have been placed. Construction traffic should be restricted to designated roadways that do not cross, or cross on a limited basis, proposed roadway or parking areas.

- Soft areas can be over-excavated and replaced with granular structural fill.
- Construction roadways on soft subgrade soils should consist of a minimum 2-foot thickness of large cobbles of 4 to 6 inches in diameter with sufficient sand and fines to fill voids. Construction entrances should consist of a 6-inch thickness of clean, 2-inch minimum, angular drain-rock and must be a minimum of 10 feet wide and 30 to 50 feet long. During the construction process, top dressing of the entrance may be required for maintenance.
- Scarification and aeration of subgrade soils can be employed to reduce the moisture content of wet subgrade soils. After stripping is complete, the exposed subgrade should be ripped or disked to a depth of 1½ feet and allowed to air dry for 2 to 4 weeks. Further disking should be performed on a weekly basis to aid the aeration process.
- Alternative soil stabilization methods include use of geotextiles, lime, and cement stabilization. Atlas is available to provide recommendations and guidelines at your request.

8.5 Frozen Subgrade Soils

Prior to placement of structural fill materials or foundation elements, frozen subgrade soils must either be allowed to thaw or be stripped to depths that expose non-frozen soils and wasted or stockpiled for later use. Stockpiled materials must be allowed to thaw and return to near-optimal conditions prior to use as structural fill.

The onsite, shallow clayey and silty soils are susceptible to frost heave during freezing temperatures. For exterior flatwork and other structural elements, adequate drainage away from subgrades is critical. Compaction and use of structural fill will also help to mitigate the potential for frost heave. Complete removal of frost susceptible soils for the full frost depth, followed by replacement with a non-frost susceptible structural fill, can also be used to mitigate the potential for frost heave. Atlas is available to provide further guidance/assistance upon request.

8.6 Structural Fill

Soils recommended for use as structural fill are those classified as GW, GP, SW, and SP in accordance with the Unified Soil Classification System (USCS) (ASTM D2487). Use of silty soils (USCS designation of GM, SM, and ML) as structural fill may be acceptable. However, use of silty soils (GM, SM, and ML) as structural fill below footings is prohibited. These materials require very high moisture contents for compaction and require a long time to dry out if natural moisture contents are too high and may also be susceptible to frost heave under certain conditions. Therefore, these materials can be quite difficult to work with as moisture content, lift thickness, and compactive effort becomes difficult to control. If silty soil is used for structural fill, lift thicknesses should not exceed 6 inches (loose), and fill material moisture must be closely monitored at both the working elevation and the elevations of materials already placed. Following placement, silty soils must be protected from degradation resulting from construction traffic or subsequent construction.

Recommended granular structural fill materials, those classified as GW, GP, SW, and SP, should consist of a 6-inch minus select, clean, granular soil with no more than 50 percent oversize (greater than ¾-inch) material and no more than 12 percent fines (passing No. 200 sieve). These fill materials should be placed in layers not to exceed 12 inches in loose thickness. Prior to placement of structural fill materials, surfaces must be prepared as outlined in the **Construction Considerations** section. Structural fill material should be moisture-conditioned to achieve optimum moisture content prior to compaction. For structural fill below footings, areas of compacted backfill must extend outside the perimeter of the footings for a distance equal to the thickness of fill between the bottom of foundation and underlying soils, or 5 feet, whichever is less. All fill materials must be monitored during placement and tested to confirm compaction requirements, outlined below, have been achieved.

Each layer of structural fill must be compacted, as outlined below:

- **Below Structures and Rigid Pavements:** A minimum of 95 percent of the maximum dry density as determined by ASTM D1557.
- **Below Flexible Pavements:** A minimum of 92 percent of the maximum dry density as determined by ASTM D1557 or 95 percent of the maximum dry density as determined by ASTM D698.

The ASTM D1557 test method must be used for samples containing up to 40 percent oversize (greater than ¾-inch) particles. If material contains more than 40 percent but less than 50 percent oversize particles, compaction of fill must be confirmed by proof rolling each lift with a 10-ton vibratory roller (or equivalent) until the maximum density has been achieved. Density testing must be performed after each proof rolling pass until the in-place density test results indicate a drop (or no increase) in the dry density, defined as maximum density or “break over” point. The number of required passes should be used as the requirements on the remainder of fill placement. Material should contain sufficient fines to fill void spaces, and must not contain more than 50 percent oversize particles.

8.7 Backfill of Walls

Backfill materials must conform to the requirements of structural fill, as defined in this report. For wall heights greater than 2.5 feet, the maximum material size should not exceed 4 inches in diameter. Placing oversized material against rigid surfaces interferes with proper compaction, and can induce excessive point loads on walls. Backfill shall not commence until the wall has gained sufficient strength to resist placement and compaction forces. Further, retaining walls above 2.5 feet in height shall be backfilled in a manner that will limit the potential for damage from compaction methods and/or equipment. It is recommended that only small hand-operated compaction equipment be used for compaction of backfill within a horizontal distance equal to the height of the wall, measured from the back face of the wall.

Backfill should be compacted in accordance with the specifications for structural fill, except in those areas where it is determined that future settlement is not a concern, such as planter areas. In nonstructural areas, backfill must be compacted to a firm and unyielding condition.

8.8 Excavations

Shallow excavations that do not exceed 4 feet in depth may be constructed with side slopes approaching vertical. Below this depth, it is recommended that slopes be constructed in accordance with Occupational Safety and Health Administration (OSHA) regulations, Section 1926, Subpart P. Based on these regulations, on-site soils are classified as type "C" soil, and as such, excavations within these soils should be constructed at a maximum slope of 1½ feet horizontal to 1 foot vertical (1½:1) for excavations up to 20 feet in height. Excavations in excess of 20 feet will require additional analysis. Note that these slope angles are considered stable for short-term conditions only, and will not be stable for long-term conditions.

During the subsurface exploration, boring sidewalls generally exhibited little indication of collapse; however, for deep excavations, native granular sediments cannot be expected to remain in position. These materials are prone to failure and may collapse, thereby undermining upper soil layers. This is especially true when excavations approach depths near the water table. Care must be taken to ensure that excavations are properly backfilled in accordance with procedures outlined in this report.

8.9 Groundwater Control

Groundwater is anticipated to be below the depth of most construction. Special precautions may be required for control of surface runoff and subsurface seepage. It is recommended that runoff be directed away from open excavations. Silty and clayey soils may become soft and pump if subjected to excessive traffic during time of surface runoff. Ponded water in construction areas should be drained through methods such as trenching, sloping, crowning grades, nightly smooth drum rolling, or installing a French drain system. Additionally, temporary or permanent driveway sections should be constructed if extended wet weather is forecasted.

9. GENERAL COMMENTS

Based on the subsurface conditions encountered during this investigation and available information regarding the proposed addition, the site is adequate for the planned construction. When plans and specifications are complete, and if significant changes are made in the character or location of the proposed structure, consultation with Atlas must be arranged as supplementary recommendations may be required. Suitability of subgrade soils and compaction of structural fill materials must be verified by Atlas personnel prior to placement of structural elements. Additionally, monitoring and testing should be performed to verify that suitable materials are used for structural fill and that proper placement and compaction techniques are utilized.

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Appendix I WARRANTY AND LIMITING CONDITIONS

Atlas warrants that findings and conclusions contained herein have been formulated in accordance with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics, and engineering geology only for the site and project described in this report. These engineering methods have been developed to provide the client with information regarding apparent or potential engineering conditions relating to the site within the scope cited above and are necessarily limited to conditions observed at the time of the site visit and research. Field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for the purposes cited above.

Exclusive Use

This report was prepared for exclusive use of the property owner(s), at the time of the report, and their retained design consultants (“Client”). Conclusions and recommendations presented in this report are based on the agreed-upon scope of work outlined in this report together with the Contract for Professional Services between the Client and Atlas Technical Consultants (“Consultant”). Use or misuse of this report, or reliance upon findings hereof, by parties other than the Client is at their own risk. Neither Client nor Consultant make representation of warranty to such other parties as to accuracy or completeness of this report or suitability of its use by such other parties for purposes whatsoever, known or unknown, to Client or Consultant. Neither Client nor Consultant shall have liability to indemnify or hold harmless third parties for losses incurred by actual or purported use or misuse of this report. No other warranties are implied or expressed.

Report Recommendations are Limited and Subject to Misinterpretation

There is a distinct possibility that conditions may exist that could not be identified within the scope of the investigation or that were not apparent during our site investigation. Findings of this report are limited to data collected from noted explorations advanced and do not account for unidentified fill zones, unsuitable soil types or conditions, and variability in soil moisture and groundwater conditions. To avoid possible misinterpretations of findings, conclusions, and implications of this report, Atlas should be retained to explain the report contents to other design professionals as well as construction professionals.

Since actual subsurface conditions on the site can only be verified by earthwork, note that construction recommendations are based on general assumptions from selective observations and selective field exploratory sampling. Upon commencement of construction, such conditions may be identified that require corrective actions, and these required corrective actions may impact the project budget. Therefore, construction recommendations in this report should be considered preliminary, and Atlas should be retained to observe actual subsurface conditions during earthwork construction activities to provide additional construction recommendations as needed.

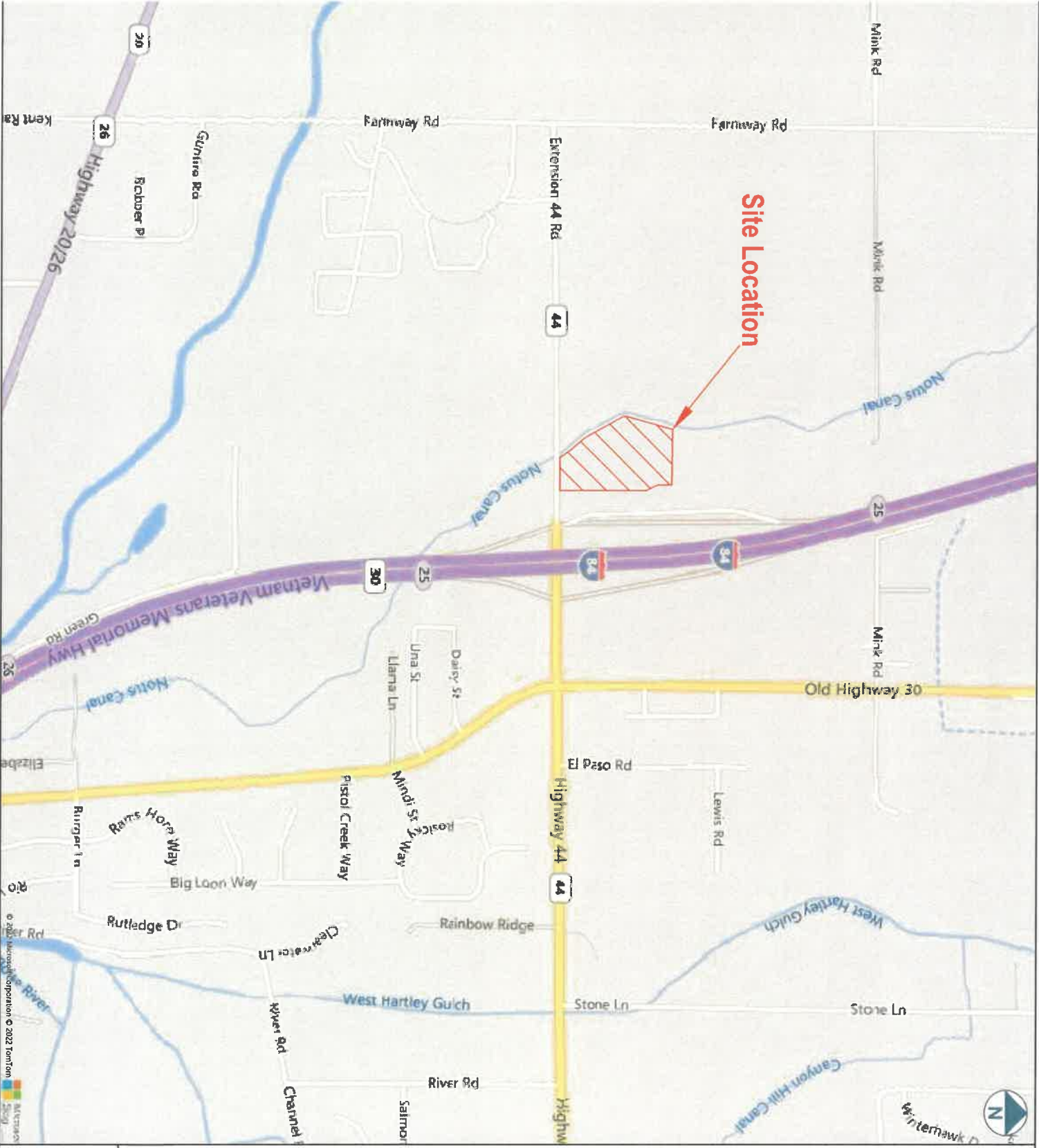


Since geotechnical reports are subject to misinterpretation, **do not** separate the soil logs from the report. Rather, provide a copy of, or authorize for their use, the complete report to other design professionals or contractors. Locations of exploratory sites referenced within this report should be considered approximate locations only. For more accurate locations, services of a professional land surveyor are recommended.

This report is also limited to information available at the time it was prepared. In the event additional information is provided to Atlas following publication of our report, it will be forwarded to the client for evaluation in the form received.


Environmental Concerns

Comments in this report concerning either onsite conditions or observations, including soil appearances and odors, are provided as general information. These comments are not intended to describe, quantify, or evaluate environmental concerns or situations. Since personnel, skills, procedures, standards, and equipment differ, a geotechnical investigation report is not intended to substitute for a geoenvironmental investigation or a Phase II/III Environmental Site Assessment. If environmental services are needed, Atlas can provide, via a separate contract, those personnel who are trained to investigate and delineate soil and water contamination.



MAP NOTES:
 • Not to Scale

LEGEND

Approximate Site Location 

Caldwell Maintenance Building Expansion
 1530 Highway 44
 Caldwell, ID

Modified by: MPK
 November 14, 2022
 Drawing: B222379g

ATLAS

2791 S. Victory View Way
 Boise, ID 83709

Phone: (208) 376-4748
 Fax: (208) 322-6515
 Web: atlas.com

Site Map

Figure 2



NOTES:
• Not to Scale

LEGEND

Approximate Area of Work



Approximate Atlas Boring Location



Caldwell Maintenance Building Expansion

1530 Highway 44
Caldwell, ID

Modified by: MPK
November 14, 2022
Drawing: B222379g



2791 S. Victory View Way
Boise, ID 83709
Phone: (208) 376-4748
Fax: (208) 322-6515
Web: oneallas.com

ATLAS

FIELD BORING LOG

BORING NO.: B-1
TOTAL DEPTH: 16.5'
GROUNDWATER DEPTH: None

PROJECT INFORMATION

PROJECT: Caldwell Maintenance Bldg Expansion
LOCATION: 15430 Highway 44
 Caldwell, ID
JOB NO.: B222379g
LOGGED BY: Max Kasberger, EI

DRILLING INFORMATION

DRILLING CO.: Haztech Drilling, Inc.
METHOD OF DRILLING: 6" Hollow Stem Auger
SAMPLING METHODS: Split Spoon
DATES DRILLED: Novemeber 2, 2022
LATITUDE/LONGITUDE: 43.707915,-116.701731

Water level during drilling
 Standard Split Spoon
 Auger Sample
 California Sampler

DEPTH	SOIL TYPE	DESCRIPTION	MOISTURE (%)	LL/PI	% < #4	% < #200	SAMPLE	BLOWS	BLOWS PER FOOT (N)
0		ASPHALTIC CONCRETE: 2 inches thick.						8,4,2	◆
		SILTY GRAVEL WITH SAND FILL (GM-FILL): Dark brown, slightly moist, loose to medium dense, with fine to coarse-grained sand and fine to coarse gravel.						1,3,4	◆
5		POORLY GRADED SAND WITH GRAVEL (SP): Light brown, dry to slightly moist, loose to medium dense, with fine to coarse-grained sand and fine to coarse gravel.						2,6,9	◆
								5,9,11	◆
10								5,8,8	◆
								4,9,13	◆
15									◆

ATLAS

FIELD BORING LOG

BORING NO.: B-2
TOTAL DEPTH: 16.5'
GROUNDWATER DEPTH: None

PROJECT INFORMATION

PROJECT: Caldwell Maintenance Bldg Expansion
LOCATION: 15430 Highway 44
 Caldwell, ID
JOB NO.: B222379g
LOGGED BY: Max Kasberger, EI

DRILLING INFORMATION

DRILLING CO.: Haztech Drilling, Inc.
METHOD OF DRILLING: 6" Hollow Stem Auger
SAMPLING METHODS: Split Spoon
DATES DRILLED: Novemeber 2, 2022
LATITUDE/LONGITUDE: 43.707786,-116.702656

Water level during drilling
 Standard Split Spoon
 Auger Sample
 California Sampler

DEPTH	SOIL TYPE	DESCRIPTION	MOISTURE (%)	LL/PI	% < #4	% < #200	SAMPLE	BLOWS	BLOWS PER FOOT (N)
0		SILTY SAND WITH GRAVEL FILL (SM-FILL): Brown, slightly moist, medium dense, with fine to coarse-grained sand and fine to coarse gravel.						2,15,10	
5		LEAN CLAY WITH SAND (CL): Dark brown, dry to slightly moist, medium stiff, with fine-grained.	25.6	26/9	96	77.4		4,3,3	
10		POORLY GRADED SAND WITH GRAVEL (SP): Light brown, dry to slightly moist, medium dense, with fine to coarse-grained sand and fine to coarse gravel.						1,2,5	
15								5,10,10	
								4,10,14	
								3,6,9	

ATLAS

FIELD BORING LOG

BORING NO.: B-3
TOTAL DEPTH: 15.3'
GROUNDWATER DEPTH: None

PROJECT INFORMATION

PROJECT: Caldwell Maintenance Bldg Expansion
LOCATION: 15430 Highway 44
 Caldwell, ID
JOB NO.: B222379g
LOGGED BY: Max Kasberger, EI

DRILLING INFORMATION

DRILLING CO.: Haztech Drilling, Inc.
METHOD OF DRILLING: 6" Hollow Stem Auger
SAMPLING METHODS: Split Spoon
DATES DRILLED: Novemeber 2, 2022
LATITUDE/LONGITUDE: 43.707158,-116.702040

Water level during drilling
 Standard Split Spoon
 Auger Sample
 California Sampler

DEPTH	SOIL TYPE	DESCRIPTION	MOISTURE (%)	LL/PI	% < #4	% < #200	SAMPLE	BLOWS	BLOWS PER FOOT (N)
0		<p>SILTY SAND WITH GRAVEL FILL (SM-FILL): Brown, dry, loose, with fine to medium-grained sand and fine to coarse gravel.</p> <p>LEAN CLAY WITH SAND (CL): Dark brown, slightly moist, stiff, with fine-grained sand.</p>						5,4,5	
5		<p>SILT WITH SAND (ML): Light brown to brown, dry to slightly moist, very stiff to hard, with fine-grained sand. –Weak to moderate calcium carbonate cementation encountered intermittently throughout.</p>						4,6,21	0 30 60
10								9,21,21	0 30 60
15		<p>BASALT GRAVEL/FRACTURED BASALT: Dark gray, completely to moderately weathered, very closely to moderately fractured, friable to moderately strong.</p>						7,11,7	0 30 60
								50 for 3"	0 30 60

Appendix V GEOTECHNICAL GENERAL NOTES

Unified Soil Classification System			
Major Divisions		Symbol	Soil Descriptions
Coarse-Grained Soils < 50% passes No.200 sieve	Gravel & Gravelly Soils < 50% coarse	GW	Well-graded gravels; gravel/sand mixtures with little or no fines
		GP	Poorly-graded gravels; gravel/sand mixtures with little or no fines
		GM	Silty gravels; poorly-graded gravel/sand/silt mixtures
		GC	Clayey gravels; poorly-graded gravel/sand/clay mixtures
	Sand & Sandy Soils > 50% coarse fraction	SW	Well-graded sands; gravelly sands with little or no fines
		SP	Poorly-graded sands; gravelly sands with little or no fines
		SM	Silty sands; poorly-graded sand/gravel/silt mixtures
		SC	Clayey sands; poorly-graded sand/gravel/clay mixtures
Fine-Grained Soils > 50% passes No.200 sieve	Sils & Clays LL < 50	ML	Inorganic silts; sandy, gravelly or clayey silts
		CL	Lean clays; inorganic, gravelly, sandy, or silty, low to medium-plasticity clays
		OL	Organic, low-plasticity clays and silts
	Sils & Clays LL > 50	MH	Inorganic, elastic silts; sandy, gravelly or clayey elastic silts
		CH	Fat clays; high-plasticity, inorganic clays
		OH	Organic, medium to high-plasticity clays and silts
Highly Organic Soils		PT	Peat, humus, hydric soils with high organic content

Relative Density and Consistency Classification	
Coarse-Grained Soils	SPT Blow Counts (N)
Very Loose:	< 4
Loose:	4-10
Medium Dense:	10-30
Dense:	30-50
Very Dense:	> 50
Fine-Grained Soils	SPT Blow Counts (N)
Very Soft:	< 2
Soft:	2-4
Medium Stiff:	4-8
Stiff:	8-15
Very Stiff:	15-30
Hard:	> 30

Moisture Content and Cementation Classification	
Description	Field Test
Dry	Absence of moisture, dry to touch
Slightly Moist	Damp, but no visible moisture
Moist	Visible moisture
Wet	Visible free water
Saturated	Soil is usually below water table
Description	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

Particle Size	
Boulders:	> 12 in.
Cobbles:	12 to 3 in.
Gravel:	3 in. to 5 mm
Coarse-Grained Sand:	5 to 0.6 mm
Medium-Grained Sand:	0.6 to 0.2 mm
Fine-Grained Sand:	0.2 to 0.075 mm
Sils:	0.075 to 0.005 mm
Clays:	< 0.005 mm

Acronym List	
GS	grab sample
LL	Liquid Limit
M	moisture content
NP	non-plastic
PI	Plasticity Index
Q _p	penetrometer value, unconfined compressive strength, tsf
V	vane value, ultimate shearing strength, tsf

Appendix VI ROCK CLASSIFICATION SYSTEM

Weathering	
Weathering	Field Test
Fresh	No sign of decomposition or discoloration. Rings under hammer impact.
Slightly Weathered	Slight discoloration inwards from open fractures, otherwise similar to Fresh.
Moderately Weathered	Discoloration throughout. Weaker minerals such as feldspar decomposed. Strength somewhat less than fresh rock but cores cannot be broken by hand or scraped with a knife. Texture preserved.
Highly Weathered	Most minerals somewhat decomposed. Specimens can be broken by hand with effort or shaved with knife. Core stones present in rock mass. Texture becoming indistinct but fabric preserved.
Completely Weathered	Minerals decomposed to soil but fabric and structure preserved. Specimens easily crumbled or penetrated.

Fracturing	
Spacing	Description
6 ft.	Very widely
2 to 6 ft.	Widely
8 to 24 in.	Moderately
2 ½ to 8 in.	Closely
¾ to 2 ½ in.	Very Closely

Rock Quality Designation (RQD)	
RQD (%)	Rock Quality
90 – 100	Excellent
75 to 90	Good
50 to 75	Fair
25 to 50	Poor
0 to 25	Very Poor

Competency			
Strength	Class	Field Test	Approximate Range of Unconfined Compressive Strength (tsf)
Extremely Strong	I	Many blows with geologic hammer required to break intact specimen.	> 2000
Very Strong	II	Hand-held specimen breaks with pick end of hammer under more than one blow.	2000 - 1000
Strong	III	Cannot be scraped or peeled with knife, hand-held specimen can be broken with single moderate blow with pick end of hammer.	1000 - 500
Moderately Strong	IV	Can just be scraped or peeled with knife. Indentations 1 mm to 3 mm show in specimen with moderate blow with pick end of hammer.	500 - 250
Weak	V	Material crumbles under moderate blow with pick end of hammer and can be peeled with a knife, but is hard to hand-trim for tri-axial test specimen.	250 - 10
Friable	VI	Material crumbles in hand.	N/A



Appendix VII AASHTO PAVEMENT DESIGN

Pavement Section Design Location: Caldwell Maintenance Building Expansion, Light Duty

Average Daily Traffic Count:	100	All Lanes & Both Directions
Design Life:	20	Years
Percent of Traffic in Design Lane:	50%	
Terminal Serviceability Index (Pt):	2.5	
Level of Reliability:	95	
Subgrade CBR Value:	4	Subgrade Mr: 6,000

Calculation of Design-18 kip ESALs

	Daily Traffic	Growth Rate	Load Factors	Design ESALs
Passenger Cars:	25	2.0%	0.0008	177
Buses:	0	2.0%	0.6806	0
Panel & Pickup Trucks:	20	2.0%	0.0122	2,164
2-Axle, 6-Tire Trucks:	4	2.0%	0.1890	6,705
Emergency Vehicles:	1.0	2.0%	4.4800	39,731
Dump Trucks:	0	2.0%	3.6300	0
Tractor Semi Trailer Trucks:	0	2.0%	2.3719	0
Double Trailer Trucks:	0	2.0%	2.3187	0
Heavy Tractor Trailer Combo Trucks:	0	2.0%	2.9760	0
Average Daily Traffic in Design Lane:	50			

Total Design Life 18-kip ESALs: 48,777

Actual Log (ESALs): 4.688

Trial SN: 2.45

Trial Log (ESALs): 4.696

Pavement Section Design SN: 2.61

	Design Depth Inches	Structural Coefficient	Drainage Coefficient
Asphaltic Concrete:	2.50	0.42	n/a
Asphalt-Treated Base:	0.00	0.25	n/a
Cement-Treated Base:	0.00	0.17	n/a
Crushed Aggregate Base:	4.00	0.14	1.0
Subbase:	10.00	0.10	1.0
Special Aggregate Subgrade:	0.00	0.09	0.9



AASHTO PAVEMENT DESIGN

Pavement Section Design Location: Caldwell Maintenance Building Expansion, Heavy Duty

Average Daily Traffic Count:	100	All Lanes & Both Directions
Design Life:	20	Years
Percent of Traffic in Design Lane:	50%	
Terminal Seviceability Index (Pt):	2.5	
Level of Reliability:	95	
Subgrade CBR Value:	4	Subgrade Mr: 6,000

Calculation of Design-18 kip ESALs

	Daily Traffic	Growth Rate	Load Factors	Design ESALs
Passenger Cars:	0	2.0%	0.0008	0
Buses:	0	2.0%	0.6806	0
Panel & Pickup Trucks:	32	2.0%	0.0122	3,462
2-Axle, 6-Tire Trucks:	10	2.0%	0.1890	16,762
Emergency Vehicles:	1.0	2.0%	4.4800	39,731
Dump Trucks:	5	2.0%	3.6300	160,964
Tractor Semi Trailer Trucks:	1	2.0%	2.3719	21,035
Double Trailer Trucks:	0	2.0%	2.3187	0
Heavy Tractor Trailer Combo Trucks:	1	2.0%	2.9760	26,393
Average Daily Traffic in Design Lane:	50			

Total Design Life 18-kip ESALs: 268,347

Actual Log (ESALs): 5.429

Trial SN: 3.27

Trial Log (ESALs): 5.452

Pavement Section Design SN: 3.42

	Design Depth Inches	Structural Coefficient	Drainage Coefficient
Asphaltic Concrete:	3.00	0.42	n/a
Asphalt-Treated Base:	0.00	0.25	n/a
Cement-Treated Base:	0.00	0.17	n/a
Crushed Aggregate Base:	4.00	0.14	1.0
Subbase:	16.00	0.10	1.0
Special Aggregate Subgrade:	0.00	0.09	0.9



Appendix VIII AASHTO RIGID PAVEMENT DESIGN

Pavement Section Design Location: Caldwell Maintenance Building, Heavy Duty

Average Daily Traffic Count:	100	All Lanes & Both Directions	
Design Life:	20	Years	
% of Traffic in Design Lane:	50%		
Terminal Serviceability Index, Pt:	2		
Level of Reliability, R:	95		R-Value: 9
Subgrade CBR Value:	4		Subgrade Mr: 6,000
Native Modulus of Subgrade Reaction, K:	125		
Effective Modulus of Subgrade Reaction, K:	180		
Concrete Elastic Modulus, Ec:	4200000		
Modulus of Rupture, S'c:	650		
Load Transfer Coefficient, J:	2.9		
Drainage Coefficient, Cd:	1		
Standard Deviation, So:	0.34		
Design Serviceability Loss, Delta PSI:	2.5		

Calculation of Design 18 kip ESALs

	Daily Traffic	Growth Rate	Load Factors	Design ESAL's
Passenger Cars:	0	2.0%	0.0008	0
Buses:	0	2.0%	0.6806	0
Panel & Pickup Trucks:	32	2.0%	0.0122	3,462
2 Axle, 6 Tire Trucks:	10	2.0%	0.1890	16,762
Concrete Trucks:	1.0	2.0%	4.4800	39,731
Dump Trucks:	5	2.0%	3.6300	160,964
Tractor Semi Trailer Trucks:	1	2.0%	2.3719	21,035
Double Trailer Trucks:	0	2.0%	2.3187	0
Heavy Tractor Trailer Combo Trucks:	1	2.0%	2.9760	26,393
Average Daily Traffic in Design Lane:	50			

Total Design Life 18 kip ESAL's: 268,347

Traffic Index equivalent= 7.7

Actual Log (ESAL's): 5.429

Trial Pavement Design Thickness, inches: 6.00

Trial Log (ESAL's): 5.837

Pavement Design Thickness, Inches:	6.0
Road Mix Section Thickness, Inches:	6.0

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer

will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site’s subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note*

conspicuously that you’ve included the material for information purposes only. To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration.* Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*



Telephone: 301/565-2733

e-mail: info@geoprofessional.org www.geoprofessional.org

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EXHIBIT F
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

EXHIBIT G

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 H

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, has been uploaded to OMS.

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 I

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

CSHQ

PROJECT MANUAL

For

**Idaho Transportation
Department (ITD)
Maintenance Building
Improvements**

15430 Highway 44
Caldwell, Idaho
83605

Project No. 22123.000

January 20, 2023

BID & PERMIT SET

**SECTION 000107
SEALS PAGE**

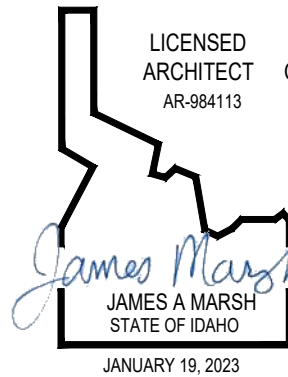
OWNER: Idaho Transportation Department (ITD)
3311 West State Street
Boise, Idaho 83703
Contact: Tony Pirc
(208) 334-8600
Tony.pirc@itd.com.idaho.gov

ARCHITECT: James A. Marsh, AIA
CSHQA, Inc.
200 West Broad Street
Boise, Idaho 83702
(208) 343-4635, phone
(208) 343-1858, fax
james.marsh@cshqa.com
www.cshqa.com

LICENSED
ARCHITECT
AR-984113

ORIGINAL DOCUMENT SIGNED BY
ARCHITECT ON FILE WITH THE
OWNER
ORIGINAL SIGNED BY:
JAMES A MARSH

ORIGINAL DATE SIGNED:
JANUARY 19, 2023



JAMES A MARSH
STATE OF IDAHO
JANUARY 19, 2023

END OF SECTION 000107

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**SECTION 000110
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- G. 016000 - Product Requirements
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- A. 102800 - Toilet, Bath, and Laundry Accessories

END OF SECTION 000110

**SECTION 011000
SUMMARY**

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: ITD Maintenance Building Improvements
- B. Owner: Idaho Department of Transportation.
- C. Architect: CSHQA, Inc.
- D. The Project consists of the construction and alterations as follows:
 - 1. Addition of the metal building envelope approximately 15 feet to the north for six vehicle bays to accommodate larger vehicles; updates to the existing shop radiant heating system, electrical lighting and power systems, and to address maintenance needs for the existing structure. Office portion of the building to be remodeled to provide a revised layout (if required), accessibility improvements, electrical power, lighting and HVAC improvements, and interior finish materials replacements

1.02 DESCRIPTION OF ALTERATIONS WORK

- A. Scope of demolition and removal work is indicated on drawings and specified in Section 024100.
- B. Scope of alterations work is indicated on drawings.

1.03 OWNER OCCUPANCY

- A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.
- B. Owner intends to occupy the Project upon Substantial Completion.
- C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- D. Schedule the Work to accommodate Owner occupancy.

1.04 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
 - 1. Locate and conduct construction activities in ways that will limit disturbance to site.
- B. Provide access to and from site as required by law and by Owner:
 - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.

1.05 WORK SEQUENCE

- A. Coordinate construction schedule and operations with Owner.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 011000

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**SECTION 012000
PRICE AND PAYMENT PROCEDURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.

1.02 SCHEDULE OF VALUES

- A. Use Schedule of Values Form: As approved by Architect and Owner.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Submit Schedule of Values electronically within 15 days after date established in Notice to Proceed.
- E. Include in each line item, the amount of Allowances specified in this section.

1.03 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement or other form acceptable to Architect and Owner.
- C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- D. Execute certification by signature of authorized officer.
- E. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- F. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- G. Submit electronic copies of each Application for Payment.
- H. Include the following with the application:
 - 1. Transmittal letter as specified for submittals in Section 013000.
 - 2. Construction progress schedule, revised and current as specified in Section 013000.
 - 3. Partial release of liens from major subcontractors and vendors.
- I. When Architect requires substantiating information, submit data justifying dollar amounts in question.

1.04 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor, using Architect's Supplemental Instructions.
- B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 - 1. Architect will issue Proposal Request, describing the required changes and will designate method of determining any change in Contract Sum or Contract Time
 - 2. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 - a. Promptly execute the change.

3. Architect may issue Construction Change Directive to instruct Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - a. Construction Change Directive contains a complete description of change in the Work and designates method for determining change in Contract Sum or Contract Time.
 - b. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - c. After completion of change, submit itemized account and supporting data necessary to substantiate adjustments in cost and time adjustments to the Contract.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within five business days.
- D. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01 6000.
- E. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
 1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
 2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
 3. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.
- F. Substantiation of Costs: Provide full information required for evaluation.
 1. On request, provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 2. Support each claim for additional costs with additional information:
 - a. Origin and date of claim.
 - b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.
 - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- G. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- H. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

1.05 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:

CSHQA, Inc.
Bid and Permit Set
January 20, 2023

ITD Maintenance Building Improvements
Caldwell, Idaho
Project No.: 22123.000

1. All closeout procedures specified in Section 017000.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 012000

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**SECTION 012500
SUBSTITUTION PROCEDURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

- A. Section 013000 - Administrative Requirements: Submittal procedures, coordination.
- B. Section 016000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.03 DEFINITIONS

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
 - 1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 - 5. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
- C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
 - 1. Form approved by Owner and Architect
 - 2. No specific form is required. Contractor's Substitution Request documentation must include the following:
 - a. Project Information:
 - 1) Official project name and number, and any additional required identifiers established in Contract Documents.
 - 2) Owner's, Architect's, and Contractor's names.
 - b. Substitution Request Information:
 - 1) Discrete and consecutive Substitution Request number, and descriptive subject/title.
 - 2) Issue date.
 - 3) Description of Substitution.
 - 4) Reason why the specified item cannot be provided.
 - 5) Differences between proposed substitution and specified item.
 - 6) Description of how proposed substitution affects other parts of work.
 - c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:

- 1) Physical characteristics.
 - 2) In-service performance.
 - 3) Expected durability.
 - 4) Visual effect.
 - 5) Warranties.
 - 6) Other salient features and requirements.
 - 7) Include, as appropriate or requested, the following types of documentation:
 - (a) Product Data:
 - (b) Samples.
 - (c) Certificates, test, reports or similar qualification data.
 - (d) Drawings, when required to show impact on adjacent construction elements.
- d. Impact of Substitution:
- 1) Savings to Owner for accepting substitution.
 - 2) Change to Contract Time due to accepting substitution.
- D. Limit each request to a single proposed substitution item.
1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

- A. Submit request for Substitution for Cause within 14 calendar days of discovery of need for substitution, but not later than 14 calendar days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
- B. Substitutions will not be considered under one or more of the following circumstances:
 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
 2. Without a separate written request.
 3. When acceptance will require revisions to Contract Documents.

3.03 RESOLUTION

- A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
- B. Architect will notify Contractor in writing of decision to accept or reject request.

3.04 ACCEPTANCE

- A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.05 CLOSEOUT ACTIVITIES

- A. See Section 017800 - Closeout Submittals, for closeout submittals.
- B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

END OF SECTION 012500

**SECTION 013000
ADMINISTRATIVE REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General administrative requirements.
- B. Preconstruction meeting.
- C. Progress meetings.
- D. Construction progress schedule.
- E. Coordination drawings.
- F. Submittals for review, information, and project closeout.
- G. Requests for Interpretation (RFI) procedures.
- H. Submittal procedures.

1.02 RELATED REQUIREMENTS

- A. Section 016000 - Product Requirements: General product requirements.
- B. Section 017000 - Execution and Closeout Requirements: Additional coordination requirements.
- C. Section 017800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 REFERENCE STANDARDS

- A. AIA G716 - Request for Information 2004.
- B. AIA G810 - Transmittal Letter 2001.
- C. CSI/CSC Form 12.1A - Submittal Transmittal Current Edition.
- D. CSI/CSC Form 13.2A - Request for Information Current Edition.

1.04 GENERAL ADMINISTRATIVE REQUIREMENTS

- A. Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- B. Make the following types of submittals to Architect:
 - 1. Requests for Interpretation (RFI).
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.
 - 5. Design data.
 - 6. Manufacturer's instructions and field reports.
 - 7. Applications for payment and change order requests.
 - 8. Progress schedules.
 - 9. Coordination drawings.
 - 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
 - 11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. Schedule meeting after Notice of Award.
- B. Attendance Required:
 - 1. Owner.
 - 2. Architect.

3. Contractor.
 4. Major Subcontractors.
- C. Some participants may attend meeting via internet virtual meeting platform.
- D. Agenda:
1. Execution of Owner-Contractor Agreement.
 2. Submission of executed bonds and insurance certificates.
 3. Distribution of Contract Documents.
 4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
 5. Designation of personnel representing the parties to Contract, other parties as needed, and Architect.
 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 7. Scheduling.
- E. Record minutes and distribute electronic copies within two days after meeting to participants, including Architect, Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the work at periodic intervals.
- B. Attendance Required:
1. Contractor.
 2. Owner.
 3. Architect.
 4. Contractor's superintendent.
 5. Major subcontractors.
- C. Agenda:
1. Review minutes of previous meetings.
 2. Review of work progress.
 3. BIM Coordination including resolution of BIM component conflicts. .
 4. Field observations, problems, and decisions.
 5. Identification of problems that impede, or will impede, planned progress.
 6. Review of submittals schedule and status of submittals.
 7. Review of RFIs log and status of responses.
 8. Review of off-site fabrication and delivery schedules.
 9. Maintenance of progress schedule.
 10. Corrective measures to regain projected schedules.
 11. Planned progress during succeeding work period.
 12. Coordination of projected progress.
 13. Maintenance of quality and work standards.
 14. Effect of proposed changes on progress schedule and coordination.
 15. Other business relating to work.
- D. Record minutes and distribute electronic copies within two days after meeting to participants, in Architect, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE

- A. If preliminary schedule requires revision after review, submit revised schedule within 10 business days.
- B. Within 20 business days after review of preliminary schedule, submit draft of proposed complete schedule for review.
1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- C. Within 10 business days after joint review, submit complete schedule.

- D. Submit updated schedule with each Application for Payment.

3.04 COORDINATION DRAWINGS

- A. Provide information required for preparation of coordination drawings and BIM coordination.
1. Contractor shall execute a data licensing agreement in the form of Agreement Between Architect and Contractor to be provided.
 2. Subcontractors, and other parties granted access by Contractor to Architect's digital data files shall execute the same data licensing agreement.
 3. Upon execution of the agreement, Architect will furnish Contractor digital data files of the 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 the Drawings.

3.05 REQUESTS FOR INTERPRETATION (RFI)

- A. Definition: A request seeking one of the following:
1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
 2. A resolution to an issue which has arisen due to field conditions and affects design intent.
- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
1. Prepare a separate RFI for each specific item.
 - a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
 - b. Do not forward requests which solely require internal coordination between subcontractors.
 2. Transmit electronically using approved form. Acceptable forms include:
 - a. AIA G716 - Request for Information .
 - b. CSI/CSC Form 13.2A - Request for Interpretation.
 - c. Use Contractor's form, subject to prior approval by Architect.
 3. Combine RFI and its attachments into a single electronic file. PDF format is preferred.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
 - a. Approval of submittals (use procedures specified elsewhere in this section).
 - b. Approval of substitutions (see Section - 016000 - Product Requirements)
 - c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
 - d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
 3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
 4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.

- a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.
- E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
 1. Official Project name and number, and any additional required identifiers established in Contract Documents.
 2. Owner's, Architect's, and Contractor's names.
 3. Discrete and consecutive RFI number, and descriptive subject/title.
 4. Issue date, and requested reply date.
 5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
 6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
 7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.
- F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
 1. Indicate current status of every RFI. Update log promptly and on a regular basis.
 2. Note dates of when each request is made, and when a response is received.
 3. Highlight items requiring priority or expedited response.
 4. Highlight items for which a timely response has not been received to date.
- H. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 3:00 PM Mountain Time will be considered as having been received on the following regular business day. RFIs received after 12:00 PM (noon) Mountain Time on Friday, will be considered as having been received on the following business day.
 1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.
- I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
 1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
 2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
 3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
 4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.06 SUBMITTAL SCHEDULE

- A. Submit to Architect for review a schedule for submittals in tabular format.

3.07 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:

1. Product data.
 2. Shop drawings.
 3. Samples for selection.
 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide electronic copies and distribute in accordance with SUBMITTAL PROCEDURES article below.

3.08 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
1. Design data.
 2. Sustainability design submittals and reports.
 3. Certificates.
 4. Test reports.
 5. Inspection reports.
 6. Manufacturer's instructions.
 7. Manufacturer's field reports.
 8. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.

3.09 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
1. Project record documents.
 2. Operation and maintenance data.
 3. Warranties.
 4. Bonds.
 5. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

3.10 NUMBER OF COPIES OF SUBMITTALS

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
1. After review, produce duplicates.
 2. Retained samples will not be returned to Contractor unless specifically so stated.

3.11 SUBMITTAL PROCEDURES

- A. General Requirements:
1. Use a separate transmittal for each item.
 2. Transmit electronically using approved form. Acceptable forms include:
 - a. Use Form AIA G810.
 - b. Use Form CSI/CSC Form 12.1A.
 - c. Use Contractor's form, subject to prior approval by Architect.
 3. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.

4. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
 5. 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 the requirements of the work and Contract Documents.
 - a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
 6. Schedule submittals to expedite the Project, and coordinate submission of related items.
 - a. For each submittal for review, allow 15 calendar days excluding delivery time to and from the Contractor.
 - b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 calendar days after receipt.
 - c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Architect's approval, allow an additional 30 calendar days.
 7. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
 8. Provide space for Contractor and Architect review stamps.
 9. When revised for resubmission, identify all changes made since previous submission.
 10. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
 11. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
 12. Submittals not requested will be recognized, and will be returned "Not Reviewed",
- B. Product Data Procedures:
1. Submit only information required by individual specification sections.
 2. Collect required information into a single submittal.
 3. Submit concurrently with related shop drawing submittal.
 4. Do not submit (Material) Safety Data Sheets for materials or products.
 5. Submit sustainable design reporting submittals under separate cover.
 6. Where a Basis of Design product is indicated in the Specifications but products or assemblies by other manufacturers listed as acceptable are submitted, provide a table with a side-by-side comparison of the submitted product or assembly and the Basis of Design. Include physical properties, colors as applicable, warranty, and performance data as specified.
 - a. Products and assemblies submitted other than the Basis of Design, must be equal or better.
 - b. If the Architect determines that the product or assembly is not equal or better products or assemblies shall be resubmitted and align with this paragraph.
- C. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
 2. Do not reproduce Contract Documents to create shop drawings.
 3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.
- D. Samples Procedures:
1. Transmit related items together as single package.
 2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.

3.12 SUBMITTAL REVIEW

- A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.

- B. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.
- C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
- D. Architect's and consultants' actions on items submitted for review:
 - 1. Authorizing purchasing, fabrication, delivery, and installation:
 - a. "Furnish as Submitted", or language with same legal meaning.
 - b. "Furnish as Noted", or language with same legal meaning.
 - 1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
 - c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
 - 2. Not Authorizing fabrication, delivery, and installation:
 - a. "Return for Corrections".
 - 1) Resubmit revised item, with review notations acknowledged and incorporated.
 - b. "Rejected - See Remarks".
 - 1) Submit item complying with requirements of Contract Documents.

END OF SECTION 013000

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**SECTION 014000
QUALITY REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality assurance.
- C. References and standards.
- D. Testing and inspection agencies and services.
- E. Contractor's construction- and design-related professional design services (Delegated Design).
- F. Contractor's design-related professional design services.
- G. Control of installation.
- H. Mock-ups.
- I. Tolerances.
- J. Manufacturers' field services.
- K. Defect Assessment.

1.02 RELATED REQUIREMENTS

- A. Document 003100 - Available Project Information: Soil investigation data.
- B. Section 011000 - Summary: Description of Work Packages.
- C. Section 016000 - Product Requirements: Requirements for material and product quality.

1.03 DEFINITIONS

- A. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
 - 1. Design Services Types Required:
 - a. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor's sole responsibilities for construction means, methods, techniques, sequences, and procedures.
 - b. Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.
- B. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.04 CONTRACTOR'S PROFESSIONAL DESIGN SERVICES (DELEGATED DESIGN)

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:
 - 1. Temporary sheeting, shoring, or supports.
 - 2. Temporary scaffolding.
 - 3. Temporary bracing.
 - 4. Temporary falsework for support of spanning or arched structures.
 - 5. Temporary foundation underpinning.
 - 6. Temporary stairs or steps required for construction access only.
 - 7. Temporary hoist(s) and rigging.

8. Investigation of soil conditions to support construction equipment.
- C. Base design on performance and/or design criteria indicated in individual specification sections.
- D. Scope of Contractor's Professional Design Services: Provide for the items of work as indicated in product specification section as Delegated Design.

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Designer's Qualification Statement: Submit for Architect's knowledge as contract administrator, or for Owner's information.
 1. Include information for each individual professional responsible for producing, or supervising production of, design-related professional services provided by Contractor.
 - a. Full name.
 - b. Professional licensure information.
 - c. Statement addressing extent and depth of experience specifically relevant to design of items assigned to Contractor.
- C. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
 1. Include calculations that have been used to demonstrate compliance to performance and regulatory criteria provided, and to determine design solutions.
 2. Include required product data and shop drawings.
 3. Include a statement or certification attesting that design data complies with criteria indicated, such as building codes, loads, functional, and similar engineering requirements.
 4. Include signature and seal of design professional responsible for allocated design services on calculations and drawings.
- D. Test Reports: After each test/inspection, promptly submit electronic PDF copies of report to Architect and to Contractor.
 1. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
- E. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.06 QUALITY ASSURANCE

- A. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

1.07 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.08 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ services of an independent testing agency to perform certain specified testing; payment for cost of services will be derived from allowance specified in Section 012100; see Section 012100 and applicable sections for description of services included in allowance.
- B. Owner will employ and pay for services of an independent testing agency to perform other specified testing.
- C. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

- A. See individual specification sections for testing and inspection required.
- B. Testing Agency Duties:
 - 1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 - 2. Perform specified sampling and testing of products in accordance with specified standards.
 - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
 - 5. Perform additional tests and inspections required by Architect.

6. Submit reports of all tests/inspections specified.
- C. Limits on Testing/Inspection Agency Authority:
 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Agency may not approve or accept any portion of the Work.
 3. Agency may not assume any duties of Contractor.
 4. Agency has no authority to stop the Work.
- D. Contractor Responsibilities:
 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
- F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.04 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.05 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.

END OF SECTION 014000

**SECTION 015000
TEMPORARY FACILITIES AND CONTROLS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary telecommunications services.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Barriers, enclosures, and fencing.
- E. Security requirements.
- F. Waste removal facilities and services.
- G. Project signage.
- H. Field offices.

1.02 TEMPORARY UTILITIES

- A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.

1.03 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.
- B. Telecommunications services shall include:
 - 1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
 - 2. Email: Account/address reserved for project use.

1.04 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

1.05 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.06 FENCING

- A. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.07 SECURITY

- A. Provide security and facilities to protect Work, and Owner's operations from unauthorized entry, vandalism, or theft.

1.08 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site periodically.

- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.09 PROJECT SIGNAGE

- A. Erect on site at location established by Architect.
- B. Provide project identification sign of design, construction, and location approved by Owner.
- C. Temporary Signs: Provide temporary, directional signs for construction personnel and visitors.
- D. No other signs are allowed without Owner permission except those required by law.

1.10 FIELD OFFICES

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture.
- B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.
- C. Locate offices a minimum distance of 30 feet from existing and new structures.

1.11 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 015000

**SECTION 016000
PRODUCT REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations.
- E. Procedures for Owner-supplied products.

1.02 RELATED REQUIREMENTS

- A. Section 012500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.
- B. Section 014000 - Quality Requirements: Product quality monitoring.

1.03 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. See Section 014000 - Quality Requirements, for additional source quality control requirements.
- C. Use of products having any of the following characteristics is not permitted:

2.02 PRODUCT OPTIONS

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

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

- A. See Section 012500 - Substitution Procedures.

3.02 OWNER-SUPPLIED PRODUCTS

- A. Owner's Responsibilities:
 - 1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
 - 2. Arrange and pay for product delivery to site.
 - 3. On delivery, inspect products jointly with Contractor.

4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 5. Arrange for manufacturers' warranties, inspections, and service.
- B. Contractor's Responsibilities:
1. Review Owner reviewed shop drawings, product data, and samples.
 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
 3. Handle, store, install and finish products.
 4. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

- A. Provide protection of stored materials and products against theft, casualty, or deterioration.
- B. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 017419.
- C. Store and protect products in accordance with manufacturers' instructions.
- D. Store with seals and labels intact and legible.
- E. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- F. For exterior storage of fabricated products, place on sloped supports above ground.
- G. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- H. Comply with manufacturer's warranty conditions, if any.
- I. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- J. Prevent contact with material that may cause corrosion, discoloration, or staining.
- K. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- L. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION 016000

**SECTION 016400
OWNER-FURNISHED PRODUCTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Owner-furnished/Owner-installed (OFOI) products.

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate installation of OFOI products with materials, assemblies, and affecting installation.

PART 2 PRODUCTS

2.01 OWNER-FURNISHED / OWNER-INSTALLED (OFOI) PRODUCTS

- A. The Owner will furnish and install products indicated.
 - 1. Microwave Oven
 - 2. Coffee Maker
 - 3. Dishwasher
 - 4. Refrigerator
 - 5. Video Monitor
 - 6. Copy Machine
 - 7. Fire Extinguishers.
 - 8. Break Room Tables and Chairs
 - 9. Work Stations and Chairs.
- B. Contractor's responsibilities: The Work includes the following, as applicable:
 - 1. Coordinate installation of OFOI items and Owner FF&E with the work of all other trades to allow sufficient continuity of the work and avoid all unnecessary schedule interruptions.
 - 2. Coordinate installation of power, data, water, plumbing, and other utilities and hookups as necessary for OFOI products and assemblies to function.
 - 3. Coordinate delivery and installation if required.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that Work specified in other Sections has been properly completed and installed as specified to allow for installation of all materials and methods required of this Section.
- B. Verify conditions and products for compliance with requirements.

3.02 CLEANING

- A. See Section 017000 - Execution and Closeout Requirements for additional requirements.
- B. Touch up marred finishes or replace products that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by product manufacturers.
- C. Replace products that have been damaged or have deteriorated beyond successful repair by finish touch up or similar minor repair procedures.

END OF SECTION 016400

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**SECTION 017000
EXECUTION AND CLOSEOUT REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Pre-installation meetings.
- C. Cutting and patching.
- D. Cleaning and protection.
- E. Starting of systems and equipment.
- F. Demonstration and instruction of Owner personnel.
- G. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- H. General requirements for maintenance service.
- I. Some provisions are applicable only to Work Package No. 2.

1.02 RELATED REQUIREMENTS

- A. Section 011000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 013000 - Administrative Requirements: Submittals procedures.
- C. Section 014000 - Quality Requirements: Testing and inspection procedures.
- D. Section 017800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.
- E. Individual Product Specification Sections:
 - 1. Advance notification to other sections of openings required in work of those sections.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.

1.04 PROJECT CONDITIONS

- A. Use of explosives is not permitted.
- B. Perform dewatering activities, as required, for the duration of the project.
- C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- D. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
 - 1. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.
- E. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

1.05 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

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

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute electronic copies within two days after meeting to participants, including Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- F. Utilize recognized engineering survey practices.
- G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
- H. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-complying work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

- D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- F. Restore work with new products in accordance with requirements of Contract Documents.
- G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 078400, to full thickness of the penetrated element.
- I. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.07 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.09 SYSTEM STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.

- E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- F. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.10 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.

3.11 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.12 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean debris from roofs, downspouts, overflow drains, area drains, and drainage systems.
- G. Clean site; sweep paved areas, rake clean landscaped surfaces.
- H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.13 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.14 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION 017000

**SECTION 017800
CLOSEOUT SUBMITTALS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project record documents.
- B. Operation and maintenance data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 017000 - Execution and Closeout Requirements: Contract closeout procedures.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
 - 1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 3. Submit electronic sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.

- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Field changes of dimension and detail.
 - 2. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

- A. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- B. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.
 - 2. Identify function, normal operating characteristics, and limiting conditions.
 - 3. Include performance curves, with engineering data and tests.
 - 4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- E. Provide servicing and lubrication schedule, and list of lubricants required.
- F. Include manufacturer's PDF file of operation and maintenance instructions.
- G. Include sequence of operation by controls manufacturer.
- H. Provide manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- I. Provide control diagrams by controls manufacturer as installed.
- J. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- K. Additional Requirements: As specified in individual product specification sections.

3.04 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data in the form of a multiple file composite electronic PDF file for each manual type required for Owner's use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide bookmark for each system.
- C. 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.

1. If file size requires, compile operation manuals in multiple file volumes.
- D. File Names and Bookmarks:
1. Bookmark individual documents based on file names.
 2. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents.
 3. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual.
 4. Use bookmarks that reflect system, subsystem, and equipment names in readily navigable file tree.
 5. Configure electronic manual to display bookmark panel on opening file.
- E. Include the following information:
1. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
 2. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

3.05 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.
- F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION 017800

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**SECTION 024100
DEMOLITION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of building elements for alteration purposes.

1.02 RELATED REQUIREMENTS

- A. Section 011000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 015000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- C. Section 017000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Site Plan: Indicate:
 - 1. Areas for temporary construction and field offices.
- C. Demolition Plan: Submit demolition plan as required by OSHA and local AHJs.
 - 1. Indicate extent of demolition, removal sequencing, bracing and shoring, and location and construction of barricades and fences.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 2. Provide, erect, and maintain temporary barriers and security devices.
 - 3. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 4. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
 - 5. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
 - 6. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Do not begin removal until built elements to be salvaged or relocated have been removed.
- D. Protect existing structures and other elements to remain in place and not removed.
 - 1. Provide bracing and shoring.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.
- E. Hazardous Materials:
 - 1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.

3.02 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
 - 1. Verify construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Maintain weatherproof exterior building enclosure, except for interruptions required for replacement or modifications; prevent water and humidity damage.
- C. Remove existing work as indicated and required to accomplish new work.
 - 1. Remove items indicated on Drawings.
- D. Services including, but not limited to, HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications: Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - 3. Verify that abandoned services serve only abandoned facilities before removal.
 - 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.
- E. Protect existing work to remain.
 - 1. Prevent movement of structure. Provide shoring and bracing as required.
 - 2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch to match new work.

3.03 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Remove materials not to be reused on site; do not burn or bury.
- C. Leave site in clean condition, ready for subsequent work.
- D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION 024100

**SECTION 030100
MAINTENANCE OF CONCRETE**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cleaning of existing concrete surfaces.
- B. Repair of exposed structural, shrinkage, and settlement cracks.
- C. Resurfacing of concrete surfaces having spalled areas and other damage.

1.02 RELATED REQUIREMENTS

- A. Section 035400 - Cast Underlayment: Cast underlayment for leveling existing concrete surfaces for floor finish.

1.03 REFERENCE STANDARDS

- A. ACI 563 - Specifications for Repair of Concrete in Buildings, 2018.
- B. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair 2013.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Indicate product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturers' instructions for storage, shelf life limitations, and handling of products.
- B. Store materials in covered, well-ventilated area and according to manufacturer's written storage instructions. Store polymer resins and hardeners separate from construction materials that can absorb odors.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS

- A. Clean concrete to be repair in compliance with ACI 563. Materials that may be used include:
 - 1. Degreaser. Where used, use products from one of the following manufacturers:
 - a. Manufacturers:
 - 1) Euclid Chemical Company; Euco Clean and Strip: www.euclidchemical.com/#sle.
 - 2) L&M Construction Chemicals, Inc, a subsidiary of Laticrete International, Inc; CITREX: www.lmcc.com/#sle.
 - 3) Nox-Crete, Inc; Bio-Clean Plus: www.nox-crete.com/#sle.
 - 4) SpecChem, LLC; Orange Peel-Citrus Cleaner: www.specchemllc.com/#sle.
 - 5) United Gilsonite Laboratories; DRYLOK® Concrete Cleaner and Degreaser: www.ugl.com/#sle.
 - 6) W. R. Meadows, Inc: www.wrmeadows.com/#sle.
 - 2. Detergent: Non-ionic detergent.
 - 3. Alkaline Cleaning Agent.
 - 4. Acidic Cleaning Agent:
 - 5. Strippers and Cleaners for Removal of Existing Coatings:

2.02 PATCHING AND REPAIR MATERIALS

- A. Patch and repair concrete in compliance with ACI 563
- B. Manufacturers:

1. Adhesives Technology Corporation: www.atcepoxy.com/#sle.
2. ARDEX Engineered Cements: www.ardexamericas.com/#sle.
3. Dayton Superior Corporation: www.daytonsuperior.com/#sle.
4. Euclid Chemical Company: www.euclidchemical.com/#sle.
5. Kaufman Products Inc: www.kaufmanproducts.net/#sle.
6. Mapei Corporation: www.mapei.com/#sle.
7. Master Builders Solutions: www.master-builders-solutions.com/en-us/#sle.
8. The QUIKRETE Companies: www.quikrete.com/#sle.
9. SpecChem, LLC: www.specchemllc.com/#sle.
10. W. R. Meadows, Inc: www.wrmeadows.com/#sle.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Coordinate with Section 035400 to verify maintenance of concrete surfaces or use of cast underlayment for floor preparation in existing facilities to be renovated.
- B. Verify that surfaces are ready to receive work.
- C. Beginning of installation means acceptance of substrate.

3.02 PREPARATION

- A. Prepare concrete surfaces to be repaired according to ICRI 310.2R.

3.03 CLEANING EXISTING CONCRETE

- A. Provide enclosures, barricades, and other temporary construction as required to protect adjacent work from damage.
- B. Clean concrete surfaces of dirt or other contamination using the gentlest method that is effective.
 1. Try the gentlest method first, then, if not clean enough, use a less gentle method taking care to watch for impending damage.
 2. Clean out cracks and voids using same methods.
- C. The following are acceptable cleaning methods, in order from gentlest to less gentle:
 1. Water washing using low-pressure, maximum of 100 psi, and, if necessary, brushes with natural or synthetic bristles.
 2. Increasing the water washing pressure to maximum of 400 psi.
 3. Adding detergent to washing water; with final water rinse to remove residual detergent.
 4. Steam-generated low-pressure hot-water washing.
- D. Do not use any of the following cleaning methods, unless otherwise indicated:
 1. Brushes with wire bristles, grinding with abrasives, solvents, hydrochloric or muriatic acid, sodium hydroxide, caustic soda, or lye.
 2. Soap or detergent that is not non-ionic.

3.04 CONCRETE SURFACE REPAIR USING CEMENTITIOUS MATERIALS

- A. Clean concrete surfaces, cracks, and joints of dirt, laitance, corrosion, and other contamination using method(s) specified above and allow to dry.
- B. Apply coating of bonding agent to entire concrete surface to be repaired.
- C. Fill voids with cementitious mortar flush with surface.
- D. Apply repair mortar by steel trowel to a minimum thickness of 1/4 inch over entire surface, terminating at a vertical change in plane on all sides.
- E. Trowel finish to match adjacent concrete surfaces.

END OF SECTION 030100

**SECTION 035400
CAST UNDERLAYMENT**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Liquid-applied self-leveling floor underlayment.
 - 1. Use gypsum-based type where required to provide level surface of existing concrete for installation of new flooring.

1.02 RELATED REQUIREMENTS

- A. Section 030100 - Maintenance of Concrete: Cleaning and repair of existing concrete flooring.

1.03 REFERENCE STANDARDS

- A. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete 2018.
- B. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters, and Gypsum Concrete 2020.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
- D. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair 2013.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's data sheets documenting physical characteristics and product limitations of underlayment materials. Include information on surface preparation, environmental limitations, and installation instructions.
- C. Manufacturer's Instructions.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Keep dry and protect from direct sun exposure, freezing, and ambient temperature greater than 105 degrees F.

1.06 FIELD CONDITIONS

- A. Do not install underlayment until floor penetrations and peripheral work are complete.
- B. Maintain minimum ambient temperatures of 50 degrees F 24 hours before, during and 72 hours after installation of underlayment.
- C. During the curing process, ventilate spaces to remove excess moisture.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Gypsum Underlayment:
 - 1. Arcosa Specialty Products; Accrete: www.acgmaterials.com/#sle.
 - 2. ARDEX Engineered Cements; ARDEX K 22 F with ARDEX P51 Primer: www.ardexamericas.com/#sle.
 - 3. Maxxon Corporation; Gyp-Crete 2000/3.2K: www.maxxon.com/#sle.
 - 4. USG; Levelrock® Series 2500 Floor Underlayment: www.usg.com/#sle.

2.02 MATERIALS

- A. Cast Underlayments, General:
 - 1. Comply with applicable code for combustibility or flame spread requirements.

2. Provide certificate of compliance from authority having jurisdiction indicating approval of underlayment materials in the required fire rated assembly.
- B. Gypsum-Based Underlayment: Gypsum based mix, that when mixed with water in accordance with manufacturer's directions will produce self-leveling underlayment with the following properties:
 1. Compressive Strength: Minimum 2,000 to 3,200 pounds per square inch, tested per ASTM C472.
 2. Density: Maximum 110 to 120 pounds per cubic foot.
 3. Final Set Time: 1 to 2 hours, maximum.
 4. Thickness: 3/4 inch to maximum 3-1/2 inch.
 5. Surface Burning Characteristics: Flame spread/Smoke developed index of 0/0 in accordance with ASTM E84.
- C. Aggregate: Dry, well graded, washed silica aggregate, approximately 1/8 inch in size and acceptable to underlayment manufacturer for thickness required.
- D. Reinforcement: Galvanized metal lath complying with written recommendations of underlayment manufacturer for specific project circumstances.
- E. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to underlayment mix materials.
- F. Primer: Manufacturer's recommended type.
- G. Joint and Crack Filler: Latex based filler, as recommended by manufacturer.
- H. Surface Sealer: As recommended in writing by manufacturer for type of floor covering to be applied to underlayment.

2.03 MIXING

- A. Site mix materials in accordance with manufacturer's instructions.
- B. Add aggregate for areas where thickness will exceed 1/2 inch. Mix underlayment and water for at least two minutes before adding aggregate, and continue mixing to assure that aggregate has been thoroughly coated.
- C. Mix to self-leveling consistency without over-watering.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Coordinate with Section 030100 to verify maintenance of concrete surfaces or use of cast underlayment for floor preparation in existing facilities to be renovated.
- B. Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum byproducts, or other compounds detrimental to underlayment material bond to substrate.

3.02 PREPARATION

- A. Concrete: Mechanically prepare steel troweled concrete to create a textured surface necessary to achieve the best bond; acceptable methods include bead blasting and scarifying. Do not use acid etching.
- B. Concrete: Prepare surfaces according to ICRI 310.2R.
- C. Wood: Install metal lath for reinforcement of underlayment.
- D. Remove substrate surface irregularities. Fill voids and deck joints with filler. Finish smooth.
- E. Vacuum clean surfaces.
- F. Prime substrate in accordance with manufacturer's instructions. Allow to dry.
- G. Close floor openings.

3.03 APPLICATION

- A. Install underlayment in accordance with manufacturer's instructions.

- B. Pump or pour material onto substrate. Do not retemper or add water.
 - 1. Pump, move, and screed while the material is still highly flowable.
 - 2. Be careful not to create cold joints.
 - 3. Wear spiked shoes while working in the wet material to avoid leaving marks.
- C. Place to indicated thickness, with top surface level to 1/8 inch in 10 ft.
- D. If a fine, feathered edge is desired, steel trowel the edge after initial set, but before it is completely hard.

3.04 CURING

- A. Once underlayment starts to set, prohibit foot traffic until final set has been reached.
- B. Air cure in accordance with manufacturer's instructions.

3.05 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field inspection and testing, as specified in Section 014000 - Quality Requirements.
- B. Placed Material: Agency will inspect and test for compliance with specification requirements.

END OF SECTION 035400

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**SECTION 061053
MISCELLANEOUS ROUGH CARPENTRY**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preservative treated wood materials.
- B. Communications and electrical room mounting boards.
- C. Concealed wood blocking, nailers, and supports.

1.02 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
- C. AWPA U1 - Use Category System: User Specification for Treated Wood 2022.
- D. PS 1 - Structural Plywood 2019.
- E. PS 20 - American Softwood Lumber Standard 2021.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. Species: Douglas Fir-Larch, unless otherwise indicated.
 - 2. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
 - 3. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No.2 or Standard Grade.
 - 2. Boards: Standard or No.3.

2.03 CONSTRUCTION PANELS

- A. Communications and Electrical Room Mounting Boards: PS 1, A-D plywood, or medium density fiberboard; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.
- B. Other Applications:
 - 1. Plywood Concealed From View But Located Within Exterior Enclosure: PS 1, C-C Plugged or better, Exterior grade.
 - 2. Plywood Exposed to View But Not Exposed to Weather: PS 1, A-D, or better.
 - 3. Other Locations: PS 1, C-D Plugged or better.

2.04 ACCESSORIES

- A. Fasteners and Anchors:

1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

2.05 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.02 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- C. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

3.03 INSTALLATION OF CONSTRUCTION PANELS

- A. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on edges and into studs in field of board.
 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
 3. Install adjacent boards without gaps.

END OF SECTION 061053

**SECTION 071900
WATER REPELLENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Water repellents applied to exterior and interior, concrete surfaces.

1.02 REFERENCE STANDARDS

- A. ASTM C642 - Standard Test Method for Density, Absorption, and Voids in Hardened Concrete 2021.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide product description, details of tests performed, limitations, and chemical composition.

1.04 FIELD CONDITIONS

- A. Do not apply water repellent when ambient temperature is lower than 50 degrees F or higher than 100 degrees F.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Silane, Siloxane, Silane-Siloxane Blend, and Siliconate Water Repellents:
 - 1. Sika USA: Sikagard-705L; www.usa.sika.com/#sle

2.02 MATERIALS

- A. Water Repellent: Non-glossy, colorless, penetrating, water-vapor-permeable, non-yellowing sealer, that dries invisibly leaving appearance of substrate unchanged.
 - 1. Applications: Vertical surfaces and non-traffic horizontal surfaces.
 - 2. Number of Coats: Two to three, as recommended in writing by manufacturer.
 - 3. Moisture Absorption When Applied to Concrete: 0.1 percent, maximum, when tested in accordance with ASTM C642 concrete sample completely coated with water repellent.
 - 4. Silane, siloxane, silane-siloxane blend, or siliconate that reacts chemically with concrete and masonry.
 - a. Single-component, low-viscosity, solvent free, reactive penetrating sealer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify joint sealants are installed and cured.
- C. Verify surfaces to be coated are dry, clean, and free of efflorescence, oil, or other matter detrimental to application of water repellent.

3.02 PREPARATION

- A. Protection of Adjacent Work:
 - 1. Protect adjacent surfaces from drips and overspray.
 - 2. Protect adjacent surfaces not intended to receive water repellent.
- B. Prepare surfaces to be coated as recommended by water repellent manufacturer for best results.
- C. Remove loose particles and foreign matter.
- D. Remove oil and foreign substances with a chemical solvent that will not affect water repellent.
- E. Scrub and rinse surfaces with water and let dry.
- F. Prepare surface to be coated as recommended in writing by manufacturer.

- G. Allow surfaces to dry completely to degree recommended by water repellent manufacturer before starting coating work.

3.03 APPLICATION

- A. Apply water repellent in accordance with manufacturer's instructions, using procedures and application methods recommended as producing the best results.
- B. Apply at rate recommended in writing by manufacturer, continuously over entire surface.
- C. Apply two to three coats.
- D. Remove water repellent from unintended surfaces immediately by a method instructed by water repellent manufacturer.

END OF SECTION 071900

**SECTION 072100
THERMAL INSULATION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board insulation at perimeter foundation wall.
- B. Batt insulation in exterior wall construction.

1.02 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation 2022.
- B. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2017.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
- D. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 °C 2022.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

1.04 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 FOAM BOARD INSULATION MATERIALS

- A. Extruded Polystyrene (XPS) Board Insulation: Comply with ASTM C578 with either natural skin or cut cell surfaces.
 - 1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 3. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88), minimum, per 1 inch thickness at 75 degrees F mean temperature.

2.02 MINERAL FIBER BLANKET INSULATION MATERIALS

- A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.
 - 1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 - 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.

2.03 ACCESSORIES

- A. Interior Vapor Retarder: Modified polyethylene/polyacrylate (PE/PA) film reinforced with polyethylene terephthalate (PET) fibers, 12 mil, 0.012 inch thick.
 - 1. Width: 4.9 feet.
- B. Tape: Reinforced polyethylene film with acrylic pressure sensitive adhesive.
 - 1. Application: Sealing of interior circular penetrations, such as pipes or cables.
 - 2. Width: Are required for application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

- A. Adhere a 6 inches wide strip of polyethylene sheet over construction, control, and expansion joints with double beads of adhesive each side of joint.
 - 1. Tape seal joints.
- B. Apply adhesive to back of boards:
 - 1. Three continuous beads per board length.
- C. Install boards horizontally on foundation perimeter.
 - 1. Place boards to maximize adhesive contact.
 - 2. Install in running bond pattern.
 - 3. Butt edges and ends tightly to adjacent boards and to protrusions.
- D. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BATT INSTALLATION

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over face of member
- F. Tape seal tears or cuts in vapor retarder.
- G. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane; tape seal in place.

3.04 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION 072100

**SECTION 072500
WEATHER BARRIERS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Weather-resistant air barriers.

1.02 REFERENCE STANDARDS

- A. AAMA 714 - Voluntary Specification for Liquid Applied Flashing Used to Create a Water-Resistive Seal around Exterior Wall Openings in Buildings 2019.
- B. AATCC Test Method 127 - Test Method for Water Resistance: Hydrostatic Pressure 2018, with Editorial Revision (2019).
- C. ASTM C297/C297M - Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions 2016.
- D. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension 2016 (Reapproved 2021).
- E. ASTM D522/D522M - Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings 2017 (Reapproved 2021).
- F. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection 2021.
- G. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness 2015 (Reapproved 2021).
- H. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2021.
- I. ASTM D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers 2022.
- J. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
- K. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2022a.
- L. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2022.
- M. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials 2021a.
- N. ASTM E2357 - Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies 2018.
- O. ICC-ES AC212 - Acceptance Criteria for Water-Resistive Coatings Used as Water-Resistive Barriers over Exterior Sheathing 2015.
- P. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components 2023.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on material characteristics, performance criteria, and limitations.
 - 1. Include ICC evaluation reports as applicable.
- C. Shop Drawings: Provide drawings of special joint conditions.
- D. Manufacturer's Installation Instructions: Indicate preparation, installation methods, and storage and handling criteria.

1.04 QUALITY ASSURANCE

- A. Air Barrier Association of America (ABAA) Evaluated Air Barrier Assemblies; www.airbarrier.org/#sle: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.
- B. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.

1.05 MOCK-UPS

- A. See Section 014000 - Quality Requirements for additional requirements.
- B. Construct weather barrier mock-up as part of exterior assembly mock-up as directed.
- C. Locate where directed.
- D. Mock-up may remain as part of work.

1.06 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

PART 2 PRODUCTS

2.01 WATER-RESISTIVE BARRIER MATERIALS

- A. Water-Resistive Barrier: For use in Construction Types I, II, III, and IV on buildings greater than 40 feet in height.
 - 1. Comply with NFPA 285 wall assembly requirements in accordance with local building code and authorities having jurisdiction (AHJ).
- B. Water-Resistive Barrier Coating: Fluid applied, UV-resistant coating for use over various types of exterior sheathing, CMU, and precast concrete in accordance with ICC-ES AC212.
 - 1. Material: Water based latex.
 - 2. Dry Film Thickness (DFT): As recommended in writing by manufacturer for substrate, but not less than 7 mil, 0.007 inch.
 - 3. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A when tested in accordance with ASTM E84.
 - 4. Fire Resistance: Permitted for use in exterior walls of fire-resistance-rated construction assemblies, ASTM E119.
 - 5. Air Permeance: When tested in accordance with ASTM E2178:
 - a. Building Envelope Leakage: 0.4 cfm/sq ft, maximum.
 - b. Material Leakage: 0.004 cfm/sq ft, maximum.
 - 6. Assembly Air Leakage: 0.04 cfm/sq ft, maximum, when tested in accordance with ASTM E2357.
 - 7. Water Vapor Permeance: 10 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedure B - Water Method, at 73.4 degrees F.
 - 8. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 90 days of weather exposure.
 - 9. Elongation: 300 percent, minimum, when tested in accordance with ASTM D412.
 - 10. Nail Sealability: Pass, when tested in accordance with ASTM D1970/D1970M.
 - 11. Flexibility: No cracking or delamination before and after aging when tested in accordance with ASTM D522/D522M
 - 12. Resistance to Mold: No mold growth after 28 days when tested in accordance with ASTM D3273.
 - 13. Adhesion: Not less than 30 psi, when tested in accordance with ASTM C297/C297M.
 - 14. Field Adhesion Testing: Not less than 30 psi, when tested in accordance with ASTM D4541
 - 15. VOC Content: Zero.

16. Sealants, Tapes and Accessories: As recommended by coating manufacturer.
17. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 6 month of weather exposure.
18. Products:
 - a. GCP Applied Technologies: www.gcpat.com/#sle.
 - b. Henry Company: www.henry.com/#sle.
 - c. Parex USA, Inc: www.parexusa.com/#sle.
 - d. Pecora Corporation: www.pecora.com/#sle.
 - e. Sto Corp; Sto Gold Coat: www.stocorp.com/#sle.
 - f. Substitutions: See Section 016000 - Product Requirements.

2.02 ACCESSORIES

- A. Sealants, Tapes, and Accessories Used for Sealing Water-Resistive Barrier and Adjacent Substrates: As indicated or complying with weather barrier manufacturer's written installation instructions.
- B. Sealant for Cracks and Joints In Substrates: Resilient elastomeric joint sealant compatible with substrates and and as recommended in writing weather barrier materials.
 1. Application: Apply at 20 to 30 mil, 0.020 to 0.030 inch nominal thickness.
 2. Color: Yellow.
 3. Elongation: 350 percent at 30 DFT, measured in accordance with ASTM D412.
 4. Comply with NFPA 285 requirements for wall assembly.
- C. Sealant for Cracks and Joints In Substrates: Resilient elastomeric joint sealant compatible with substrates and and as recommended in writing weather barrier materials.
 1. Color: Yellow.
 2. Elongation: 420 percent at 30 DFT, measured in accordance with ASTM D412.
 3. Comply with NFPA 285 requirements for wall assembly.
 4. Products:
 - a. Sto Corp; StoGuard RapidSeal: www.stocorp.com/#sle.
- D. Preformed Transition Membrane: Semi-rigid silicone or polyester composition, tapered edges, and tear resistant.
 1. Products:
- E. Liquid Flashing: One part, fast curing, nonsag, elastomeric, gun grade, trowelable liquid flashing, complying with AAMA 714.
 1. Water Penetration Resistance: Noe water penetration after 5 hours when tested in accordance with AATCC Test Method 127.
 2. Adhesion: Not less than 15 psi, when tested in accordance with ASTM D4541.
 3. Durometer Hardness: Minimum of 31 for Type A, after 28 days when tested in accordance with ASTM D2240.
 4. Elongation: 350 percent at 30 DFT, measured in accordance with ASTM D412.
 5. Products:
 - a. Sto Corp; Sto RapidGuard : www.stocorp.com/#sle.
- F. Primer: As recommended in writing by weather barrier manufacturer, where required.
- G. Thinners and Cleaners: As recommended in writing by weather barrier manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and conditions comply with requirements of this section.

3.02 PREPARATION

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

- B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's installation instructions.

3.03 INSTALLATION

- A. Install materials in accordance with manufacturer's written installation instructions.
- B. Weather-Resistive Barriers: Install continuous water-resistive barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- C. Apply sealants and adhesives within recommended temperature range in accordance with manufacturer's written installation instructions.
- D. Openings and Penetrations in Exterior Water-Resistive Barriers:
 - 1. Install flashing over sills, covering entire sill framing member, and extend at least 5 inches onto water-resistive barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
 - 2. At openings filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
 - 3. At openings filled with nonflanged frames, seal water-resistive barrier to each side of framing at opening using flashing at least 9 inches wide, and covering entire depth of framing.
 - 4. At head of openings, install flashing under water-resistive barrier extending at least 2 inches beyond face of jambs; seal water-resistive barrier to flashing.
 - 5. At interior face of openings, seal gaps between window and door frames and rough framing using appropriate joint sealant over backer rod.
 - 6. Service and Other Penetrations: Form flashing around penetrating items and seal to surface of water-resistive barrier.

3.04 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for additional requirements.
- B. Owner's Inspection and Testing: Cooperate with Owner's testing agency.
 - 1. Allow access to work areas and staging.
 - 2. Notify Owner's testing agency in writing of schedule for work of this section to allow sufficient time for testing and inspection.
 - 3. Do not cover work of this section until testing and inspection is accepted.
- C. Do not cover installed weather barriers until required inspections have been completed.

3.05 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION 072500

**SECTION 074113
METAL ROOF PANELS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal roof panel system of preformed steel panels.

1.02 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.
- B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection 2021.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
- D. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference 2005 (Reapproved 2017).
- E. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference 1995 (Reapproved 2018).
- F. ASTM E1680 - Standard Test Method for Rate of Air Leakage through Exterior Metal Roof Panel Systems 2016 (Reapproved 2022).

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Summary of test results, indicating compliance with specified requirements.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
 - 4. Specimen warranty.
- C. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
 - 1. Show work to be field-fabricated or field-assembled.
- D. Test Reports: Indicate compliance of metal roofing system to specified requirements.
- E. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Provide strippable plastic protection on prefinished roofing panels for removal after installation.
- B. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

1.05 FIELD CONDITIONS

- A. Do not install metal roof panels, underlayment when surface, ambient air, or wind chill temperatures are below 45 degrees F.

1.06 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Finish Warranty: Provide 20-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Architectural Metal Roof Panel Manufacturers:
 - 1. ATAS International, Inc; Colonial Seam: www.atas.com/#sle.
 - 2. Berridge Manufacturing Company; M-Panel: www.berridge.com/#sle.
 - 3. Metal Roofing Systems, Inc; System 1000 - Metal Roof Panels: www.metalroofingsystems.biz/#sle.
 - 4. Metl-Span, a Nucor Company: www.metlspan.com/#sle.
 - 5. Petersen Aluminum Corporation; PAC T-250 Panel: www.pac-clad.com/#sle.

2.02 PERFORMANCE REQUIREMENTS

- A. Metal Roof Panels: Provide complete roofing assemblies, including roof panels, clips, fasteners, connectors, and miscellaneous accessories, tested for compliance with the following minimum standards:
 - 1. Structural Design Criteria: Provide panel assemblies designed to safely support design loads at support spacing indicated, with deflection not to exceed L/180 of span length(L) when tested in accordance with ASTM E1592.
 - 2. Overall: Complete weathertight system tested and approved in accordance with ASTM E1592.
 - 3. Air Infiltration: Maximum 0.06 cfm/sq ft at air pressure differential of 6.24 lbf/sq ft, when tested according to ASTM E1680.
 - 4. Water Penetration: No water penetration when tested in accordance with procedures and recommended test pressures of ASTM E1646; perform test immediately following air infiltration test.
 - 5. Thermal Movement: Design system to accommodate without deformation anticipated thermal movement over ambient temperature range of 100 degrees F.

2.03 METAL ROOF PANELS

- A. Metal Roof Panels: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.
- B. Metal Panels: Factory-formed panels with factory-applied finish.
 - 1. Steel Panels:
 - a. Steel Thickness: Minimum 24 gauge, 0.024 inch.
 - 2. Profile: Standing seam, with minimum 1-inch seam height; concealed fastener system for field seaming with special tool.
 - 3. Texture: Smooth.
 - 4. Length: As indicated on drawings.
 - 5. Width: Maximum panel coverage of 24 inches.

2.04 ATTACHMENT SYSTEM

- A. Concealed System: Provide manufacturer's standard stainless steel or nylon-coated aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

2.05 FINISHES

- A. Fluoropolymer Coil Coating System: Manufacturer's standard multi-coat metal coil coating system complying with AAMA 2605, including at least 70 percent polyvinylidene fluoride (PVDF) resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss to match sample.

2.06 ACCESSORIES

- A. Miscellaneous Sheet Metal Items: Provide flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, and equipment curbs of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.
- B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.
- C. Sealants:
 - 1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
 - 2. Concealed Sealant: Non-curing butyl sealant or tape sealant.
- D. Thermal Insulation: Provide flexible blanket, rigid, or semi-rigid type, faced with white, flexible, non-dusting vapor retarder tested for maximum flame spread index of 50, per ASTM E84; for installation using spacer blocks.
- E. Underlayment: Synthetic non-asphaltic sheet, intended by manufacturer for mechanically fastened roofing underlayment without sealed seams.
 - 1. Self Sealability: Nail sealability in accordance with ASTM D1970/D1970M.
 - 2. Low Temperature Flexibility: Comply with ASTM D1970/D1970M.
 - 3. Fasteners: As specified by manufacturer and building code qualification report or approval.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to ensure that completed roof will be free of leaks.
- B. Remove protective film from surface of roof panels immediately prior to installation; strip film carefully to avoid damage to prefinished surfaces.
- C. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by metal roof panel manufacturer.
- D. At locations where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.03 INSTALLATION

- A. Overall: Install roofing system in accordance with approved shop drawings and metal roof panel manufacturer's instructions and recommendations, as applicable to specific project conditions; securely anchor components of roofing system in place allowing for thermal and structural movement.
 - 1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
 - 2. Minimize field cutting of panels. Where field cutting is required, use methods that will not distort panel profiles. Use of torches for field cutting is prohibited.
- B. Accessories: Install necessary components that are required for complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.

- C. Roof Panels: Install metal roof panels in accordance with manufacturer's installation instructions, minimizing transverse joints except at junction with penetrations.
- D. Insulation: Install insulation between roof covering and supporting members to present a neat appearance; fold, staple, and tape seams unless otherwise approved by Architect.
 - 1. Install batt insulation in areas concealed from view.

3.04 CLEANING

- A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

3.05 PROTECTION

- A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.
- B. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

END OF SECTION 074113

**SECTION 079200
JOINT SEALANTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer 2015 (Reapproved 2022).
- B. ASTM C834 - Standard Specification for Latex Sealants 2017.
- C. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications 2022.
- D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- E. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.
- F. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-- Tension 2016 (Reapproved 2021).
- G. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).
- H. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2022.
- I. UL 263 - Standard for Fire Tests of Building Construction and Materials Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
 - 6. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
 - 7. Sample product warranty.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- E. Installer's qualification statement.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Nonsag Sealants:
 - 1. Bostik Inc: www.bostik-us.com/#sle.
 - 2. Dow: www.dow.com/#sle.

3. Hilti, Inc: www.us.hilti.com/#sle.
 4. Pecora Corporation: www.pecora.com/#sle.
 5. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
 6. Sika Corporation: www.usa.sika.com/#sle.
 7. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
- B. Self-Leveling Sealants:
1. Bostik Inc: www.bostik-us.com/#sle.
 2. Dow: www.dow.com/#sle.
 3. Pecora Corporation: www.pecora.com/#sle.
 4. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
 5. Sika Corporation: www.usa.sika.com/#sle.
 6. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
 7. W.R. Meadows, Inc: www.wrmeadows.com/#sle.

2.02 JOINT SEALANT APPLICATIONS

- A. Scope:
1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to:
 - a. Wall expansion and control joints.
 - b. Joints between door, window, and other frames and adjacent construction.
 - c. Joints between different exposed materials.
 - d. Openings below ledge angles in masonry.
 - e. Other joints indicated below.
 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, piping, and other openings; between wall/ceiling and other construction; and other flanking sound paths.
 - c. Other joints indicated below.
 3. Do not seal the following types of joints:
 - a. Intentional weep holes in masonry.
 - b. Joints indicated to be treated with manufactured expansion joint cover, or some other type of sealing device.
 - c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - d. Joints where installation of sealant is specified in another section.
 - e. Joints between suspended panel ceilings/grid and walls.
- B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.

2.03 NONSAG JOINT SEALANTS

- A. Silicone Sealant: ASTM C920, Grade NS, Use T; single-component, explicitly approved by manufacturer for traffic exposure when recessed below traffic surface; not expected to withstand continuous water immersion.
1. Movement Capability: Plus 100 percent and minus 50 percent, minimum.
- B. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
1. Color: White.
- C. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
- D. Acrylic Latex Sealant: ASTM C834; for use as acoustical sealant and in firestopping systems for expansion joints and through penetrations.

1. Color: To be selected by Architect from manufacturer's standard range.
2. Fire Rated System: Complies with UL 263 and ASTM E119 with UL fire resistance classifications.

2.04 SELF-LEVELING JOINT SEALANTS

- A. Self-Leveling Polyurethane Sealant for Horizontal Expansion Joints: ASTM C920, Grade P, Uses T, M, and O; multi-component; explicitly approved by manufacturer for horizontal expansion joints.
 1. Movement Capability: Plus and minus 25 percent, minimum.
 2. Hardness Range: 30 to 35, Shore A, when tested in accordance with ASTM C661.
 3. Color: To be selected by Architect from manufacturer's standard range.
 4. Tensile Strength: 200 to 250 psi in accordance with ASTM D412.
 5. Products:
 - a. Pecora Corporation; Urexpan NR-200: www.pecora.com/#sle.
 - b. Tremco Commercial Sealants & Waterproofing; THC-901: www.tremcosealants.com/#sle.

2.05 ACOUSTICAL JOINT SEALANTS

- A. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant, ASTM C834; tested according to ASTM E90.
 1. Manufacturers:
 - a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant.
 - b. United States Gypsum Co.; SHEETROCK Acoustical Sealant.
- B. Acoustical Sealant for Concealed Joints: Nondryinnonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber sealant recommended for sealing interior concealed joints.
 1. Manufacturers:
 - a. Pecora Corporation; BA-98.
 - b. Tremco; Tremco Acoustical Sealant
- C. Acoustical Fire Rated Outlet Backer Pad
 1. Basis of Design: IsoBacker from Kinetics Noise Control.

2.06 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.
- C. Install acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- E. Install bond breaker backing tape where backer rod cannot be used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

END OF SECTION 079200

**SECTION 081113
HOLLOW METAL DOORS AND FRAMES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated hollow metal doors and frames.
- B. Thermally insulated hollow metal doors with frames.

1.02 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors 2022.
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100) 2017.
- D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames 2020.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2022.
- F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable 2021a.
- G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2018a.
- H. BHMA A156.115 - Hardware Preparation in Steel Doors and Steel Frames 2016.
- I. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
- J. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames 2002.
- K. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames 2011.
- L. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames 2017.
- M. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames 2014.
- N. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames 2019.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hollow Metal Doors and Frames:
 - 1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 2. Curries, an Assa Abloy Group company: www.assaabloydss.com/#sle.

3. Republic Doors, an Allegion brand: www.republicdoor.com/#sle.
4. Steelcraft, an Allegion brand: www.allegion.com/#sle.

2.02 PERFORMANCE REQUIREMENTS

- A. Requirements for Hollow Metal Doors and Frames:
1. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
 3. Door Edge Profile: Manufacturers standard for application indicated.
 4. Typical Door Face Sheets: Flush.
 5. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
 6. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvanized) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
 - a. Based on SDI Standards: Provide at least A40/ZF120 (galvanized) when necessary, coating not required for typical interior door applications, and at least A60/ZF180 (galvanized) for corrosive locations.
- B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

- A. Door Finish: Factory primed and field finished.
- B. Exterior Doors: Thermally insulated.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 3 - Extra Heavy-duty.
 - b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 1 - Full Flush.
 - d. Door Face Metal Thickness: 16 gauge, 0.053 inch, minimum.
 2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
 3. Door Thickness: 1-3/4 inches, nominal.
- C. Interior Doors, Non-Fire-Rated:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 1 - Standard-duty.
 - b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Model 2 - Seamless.
 - d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
 2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
 3. Door Thickness: 1-3/4 inches, nominal.

2.04 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Frame Finish: Factory primed and field finished.

- C. Exterior Door Frames: Face welded type.
 - 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
 - 2. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.
 - 3. Weatherstripping: Separate, see Section 087100.
- D. Interior Door Frames, Non-Fire Rated: Face welded type.
 - 1. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.

2.05 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Coordinate frame anchor placement with wall construction.
- C. Install door hardware as specified in Section 087100.

3.03 TOLERANCES

- A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.04 ADJUSTING

- A. Adjust for smooth and balanced door movement.

END OF SECTION 081113

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**SECTION 087100
DOOR HARDWARE**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Hardware for hollow metal doors.
- B. Thresholds.
- C. Weatherstripping and gasketing.

1.02 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. BHMA A156.1 - Standard for Butts and Hinges 2021.
- C. BHMA A156.2 - Bored and Preassembled Locks and Latches 2017.
- D. BHMA A156.3 - Exit Devices 2020.
- E. BHMA A156.4 - Door Controls - Closers 2019.
- F. BHMA A156.5 - Cylinders and Input Devices for Locks 2020.
- G. BHMA A156.7 - Template Hinge Dimensions 2016.
- H. BHMA A156.16 - Auxiliary Hardware 2018.
- I. BHMA A156.17 - Self Closing Hinges & Pivots 2019.
- J. BHMA A156.18 - Materials and Finishes 2020.
- K. BHMA A156.21 - Thresholds 2019.
- L. BHMA A156.22 - Standard for Gasketing 2021.
- M. DHI (H&S) - Sequence and Format for the Hardware Schedule 2019.
- N. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames 2004.
- O. DHI WDHS.3 - Recommended Locations for Architectural Hardware for Flush Wood Doors 1993; also in WDHS-1/WDHS-5 Series, 1996.
- P. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
- Q. UL (DIR) - Online Certifications Directory Current Edition.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.
- C. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
 - 1. Comply with DHI (H&S) using door numbers and hardware set numbers as indicated in construction documents.
 - 2. List groups and suffixes in proper sequence.
 - 3. Provide complete description for each door listed.
 - 4. Provide manufacturer name, product names, and catalog numbers; include functions, types, styles, sizes and finishes of each item.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

1.05 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer's Warranty: Provide warranty against defects in material and workmanship for period indicated. Complete forms in Owner's name and register with manufacturer.
 - 1. Locksets and Cylinders: Three years, minimum.
 - 2. Other Hardware: Two years, minimum.

PART 2 PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

- A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.
- B. Provide individual items of single type, of same model, and by same manufacturer.
- C. Provide door hardware products that comply with the following requirements:
 - 1. Applicable provisions of federal, state, and local codes.
 - 2. Accessibility: ADA Standards and ICC A117.1.
- D. Verify Owner's preferred lock core manufacturer prior to ordering.

2.02 HINGES

- A. Manufacturers:
 - 1. McKinney; an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 2. Ives, an Allegion brand; www.us.allegion.com/#sle.
- B. Hinges: Comply with BHMA A156.1, Grade 1.
 - 1. Self Closing Hinges: Comply with BHMA A156.17.
 - 2. Butt Hinges: Comply with BHMA A156.1 and BHMA A156.7 for templated hinges.
 - a. Provide hinge width required to clear surrounding trim.
 - 3. Provide hinges on every swinging door.
 - 4. Provide following quantity of butt hinges for each door:
 - a. Doors up to 60 inches High: Two hinges.
 - b. Doors From 60 inches High up to 90 inches High: Three hinges.
 - c. Doors 90 inches High up to 120 inches High: Four hinges.

2.03 EXIT DEVICES

- A. Manufacturers:
 - 1. Sargent; an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 2. Falcon; an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 3. Precision, dormakaba Group: www.precisionhardware.com/#sle.
 - 4. Von Duprin, an Allegion brand: www.allegion.com/us/#sle.
- B. Exit Devices: Comply with BHMA A156.3, Grade 1.
 - 1. Lever design to match lockset trim.
 - 2. Provide cylinder with cylinder dogging or locking trim.
 - 3. Provide exit devices properly sized for door width and height.
 - 4. Provide strike as recommended by manufacturer for application indicated.
 - 5. Provide UL (DIR) listed exit device assemblies for fire-rated doors and panic device assemblies for non-fire-rated doors.

2.04 LOCK CYLINDERS

- A. Manufacturers:
 - 1. Best, dormakaba Group: www.bestaccess.com/#sle.
 - 2. Falcon; an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 3. Schlage, an Allegion brand: www.allegion.com/us/#sle.
 - 4. Sargent; an Assa Abloy Group company: www.assaabloydss.com/#sle.

- B. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
 - 1. Provide small format interchangeable core (SFIC) type cylinders, Grade 1, with six-pin core in compliance with BHMA A156.5 at locations indicated.
 - 2. Provide cylinders from same manufacturer as locking device.
 - 3. Provide cams and/or tailpieces as required for locking devices.

2.05 CYLINDRICAL LOCKS

- A. Manufacturers:
 - 1. Best, dormakaba Group: www.bestaccess.com/#sle.
 - 2. Falcon; an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 3. Schlage, an Allegion brand: www.allegion.com/us/#sle.
 - 4. Sargent; an Assa Abloy Group company: www.assaabloydss.com/#sle.
- B. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
 - 1. Bored Hole: 2-1/8 inch diameter.
 - 2. Latchbolt Throw: 1/2 inch, minimum.
 - 3. Backset: 2-3/4 inch unless otherwise indicated.
 - 4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
 - a. Finish: To match lock or latch.

2.06 CLOSERS

- A. Manufacturers:
 - 1. Falcon; an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 2. LCN, an Allegion brand: www.allegion.com/us/#sle.
 - 3. Sargent; an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 4. Stanley, dormakaba Group: www.stanleyhardwarefordoors.com/#sle.
- B. Closers: Comply with BHMA A156.4, Grade 1.
 - 1. Type: Surface mounted to door.
 - 2. Provide door closer on each exterior door.

2.07 FLOOR STOPS

- A. Manufacturers:
 - 1. Hager Companies: www.hagerco.com/#sle.
- B. Floor Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
 - 1. Provide floor stops when wall surface is not available; be cautious not to create a tripping hazard.
 - 2. Type: Manual hold-open, with pencil floor stop.
 - 3. Material: Aluminum housing with rubber insert.

2.08 WALL STOPS

- A. Manufacturers:
 - 1. Hager Companies: www.hagerco.com/#sle.
- B. Wall Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
 - 1. Type: Bumper, concave, wall stop.
 - 2. Material: Aluminum housing with rubber insert.

2.09 THRESHOLDS

- A. Manufacturers:
 - 1. Pemko; an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 2. National Guard Products, Inc: www.ngpinc.com/#sle.
 - 3. Zero International, Inc: www.zerointernational.com/#sle.

- B. Thresholds: Comply with BHMA A156.21.
 - 1. Provide threshold at each exterior door, unless otherwise indicated.
 - 2. Type: Flat surface.
 - 3. Material: Aluminum.
 - 4. Threshold Surface: Fluted horizontal grooves across full width.
 - 5. Field cut threshold to profile of frame and width of door sill for tight fit.
 - 6. Provide non-corroding fasteners at exterior locations.

2.10 WEATHERSTRIPPING AND GASKETING

- A. Manufacturers:
 - 1. Pemko; an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 2. National Guard Products, Inc: www.ngpinc.com/#sle.
 - 3. Zero International, Inc: www.zerointernational.com/#sle.
- B. Weatherstripping and Gasketing: Comply with BHMA A156.22.
 - 1. Head and Jamb Type: Adjustable.
 - 2. Door Sweep Type: Encased in retainer.
 - 3. Material: Aluminum, with brush weatherstripping.

2.11 SILENCERS

- A. Manufacturers:
 - 1. Hager Companies: www.hagerco.com/#sle.
 - 2. Ives, an Allegion brand: www.allegion.com/us/#sle.
 - 3. Rockwood; an Assa Abloy Group company: www.assaabloydss.com/#sle.
 - 4. Trimco: www.trimcohardware.com/#sle.
- B. Silencers: Provide at equal locations on door frame to mute sound of door's impact upon closing.
 - 1. Single Door: Provide three on strike jamb of frame.
 - 2. Pair of Doors: Provide two on head of frame, one for each door at latch side.
 - 3. Material: Rubber, gray color.

2.12 FINISHES

- A. Finishes: Provide door hardware of same finish, unless otherwise indicated.
 - 1. Primary Finish: Brushed Chrome and/or Stainless Steel Appearance; BHMA A156.18.
 - a. Brushed Stainless Steel, no coating: ANSI 630.
 - b. Satin Chrome, Clear Coated: ANSI 626, ANSI 652.
 - c. Powder Coated Aluminum finish: ANSI 689.
 - d. Saddle and Panic Thresholds: Mill Aluminum finish.
 - e. Weatherstrip and Gasket: Clear Anodized Aluminum finish.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

3.02 INSTALLATION

- A. Install hardware in accordance with manufacturer's instructions and applicable codes.
- B. Use templates provided by hardware item manufacturer.
- C. Do not install surface mounted items until application of finishes to substrate are fully completed.
- D. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list; unless noted otherwise in Door Hardware Schedule or on drawings.
 - 1. For Steel Doors and Frames: Install in compliance with DHI (LOCS) recommendations.

2. For Wood Doors: Install in compliance with DHI WDHS.3 recommendations.
3. Mounting heights in compliance with ADA Standards:
 - a. Locksets: 40-5/16 inch.
 - b. Exit Devices: 40-5/16 inch.
- E. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

3.03 FIELD QUALITY CONTROL

- A. Perform field inspection and testing under provisions of Section 014000 - Quality Requirements.

3.04 ADJUSTING

- A. Adjust work under provisions of Section 017000 - Execution and Closeout Requirements.
- B. Adjust hardware for smooth operation.
- C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.05 CLEANING

- A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.
- B. Clean adjacent surfaces soiled by hardware installation.
- C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

3.06 PROTECTION

- A. Protect finished Work under provisions of Section 017000 - Execution and Closeout Requirements.
- B. Do not permit adjacent work to damage hardware or finish.

END OF SECTION 087100

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**SECTION 088000
GLAZING**

PART 2 PRODUCTS

1.01 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
 - 1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
 - 2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
 - 3. Glass thicknesses listed are minimum.
- B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
 - 1. In conjunction with weather barrier related materials described in other sections, as follows:
- C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
 - 1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
 - 3. Solar Optical Properties: Comply with NFRC 300 test method.

1.02 GLASS MATERIALS

- A. Float Glass: Provide float glass based glazing unless otherwise indicated.
 - 1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.

1.03 INSULATING GLASS UNITS

- A. Manufacturers:
 - 1. Glass: Any of the manufacturers specified for float glass.
 - 2. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
 - 3. Guardian Glass, LLC: www.guardianglass.com/#sle.
 - 4. Viracon, Apogee Enterprises, Inc: www.viracon.com/#sle.
 - 5. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
- B. Insulating Glass Units: Types as indicated.
 - 1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
 - 2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
 - 3. Warm-Edge Spacers: Low-conductivity thermoplastic with dessicant warm-edge technology design.
 - a. Spacer Width: As required for specified insulating glass unit.
 - b. Spacer Height: Manufacturer's standard.
 - 4. Spacer Color: Black.
 - 5. Edge Seal:
 - a. Single-Sealed System: Provide silicone, polysulfide, or polyurethane sealant as seal applied around perimeter.
 - b. Color: Black.
 - 6. Purge interpane space with dry air, hermetically sealed.
- C. Insulating Glass Units: Vision glass, double glazed.

1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with air.
3. Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
 - a. Tint: Clear.
 - b. Coating: Self-cleaning type, on #1 surface.
 - c. Coating: Low-E (passive type), on #2 surface.
4. Warm-edge spacer.
5. Inboard Lite: Annealed float glass, 1/4 inch thick, minimum.
6. Total Thickness: 1 inch.
7. Thermal Transmittance (U-Value): To be determined.
8. Visible Light Transmittance (VLT): To be determined
9. Solar Heat Gain Coefficient (SHGC): To be determined
10. Glazing Method: Wet glazing method, sealant and sealant.

END OF SECTION 088000

**SECTION 092116
GYPSUM BOARD ASSEMBLIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Metal channel ceiling framing.
- D. Gypsum wallboard.
- E. Joint treatment and accessories.

1.02 REFERENCE STANDARDS

- A. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing 2015, with Errata (2020).
- B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2022.
- D. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members 2015.
- E. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017 (Reapproved 2022).
- F. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.
- G. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2020.
- H. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness 2022.
- I. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs 2022.
- J. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base 2019.
- K. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.
- L. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).
- M. ASTM E413 - Classification for Rating Sound Insulation 2022.
- N. GA-216 - Application and Finishing of Gypsum Panel Products 2021.
- O. GA-600 - Fire Resistance and Sound Control Design Manual 2021.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data:
 - 1. Provide data on metal framing, gypsum board, accessories, and joint finishing system.
 - 2. Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- C. Test Reports: For stud framing products that do not comply with AISI S220 or ASTM C754, provide independent laboratory reports showing maximum stud heights at required spacings and deflections.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Member of Steel Stud Manufacturers Association (SSMA): www.ssma.com/#sle or of Supreme Steel Framing System Association (SSFSA): www.ssfsa.com/#sle.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. See Section 017419 - Construction Waste Management and Disposal for packaging waste requirements.
- B. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.
- C. Store metal products to prevent corrosion.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
- B. Interior Partitions: Where indicated, provide completed assemblies with the following characteristics:
- C. Shaft Walls at HVAC Shafts: Provide completed assemblies with the following characteristics:
 - 1. Air Pressure Within Shaft: Sustained loads of 5 lbf/sq ft with maximum mid-span deflection of L/240.
 - 2. Acoustic Attenuation: STC of 35-39 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- D. Fire-Resistance-Rated Assemblies: Provide completed assemblies as indicated on Drawings and complying with applicable code.

2.02 METAL FRAMING MATERIALS

- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S240.
- B. Manufacturers - Metal Framing, Connectors, and Accessories:
 - 1. ClarkDietrich: www.clarkdietrich.com/#sle.
 - 2. Marino: www.marinoware.com/#sle.
 - 3. R-stud, LLC: www.rstud.com/#sle.
 - 4. Phillips Manufacturing Co: www.phillipsmfg.com/#sle.
 - 5. SCAFCO Corporation: www.scafco.com/#sle.
 - 6. Steel Construction Systems: www.steelconsystems.com/#sle.
 - 7. Supreme Steel Framing System Association; : www.ssfsa.com//#sle.
- C. Nonstructural Framing System Components: AISI S220; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
 - 1. Studs: C-shaped with knurled or embossed faces.
 - 2. Runners: U shaped, sized to match studs.
 - 3. Ceiling Channels: C-shaped.
 - 4. Furring Members: Hat-shaped sections, minimum depth of 7/8 inch.
- D. Shaft Wall Studs and Accessories: AISI S220; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 and specified performance requirements.
- E. Area Separation Wall Studs and Accessories: AISI S220; galvanized sheet steel, of size and properties necessary to comply with specified performance requirements.
- F. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and fastened as indicated on drawings.
- G. Deflection and Firestop Track: Intumescent strip factory-applied to track flanges expands when exposed to heat or flames to provide a perimeter joint seal.

- H. Preformed Top Track Firestop Seal:
 - 1. Provide components UL-listed for use in UL-listed fire-resistance-rated head of partition joint systems of fire rating and movement required.
- I. Non-structural Framing Accessories:
 - 1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
 - 2. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
 - a. Materials: ASTM A36/A36M formed sheet steel support member with factory-welded ASTM A1003/A1003M steel plate base.
 - 3. Framing Connectors: ASTM A653/A653M G90 galvanized steel clips; secures cold rolled channel to wall studs for lateral bracing.

2.03 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
 - 1. American Gypsum Company: www.americangypsum.com/#sle.
 - 2. CertainTeed Corporation: www.certainteed.com/#sle.
 - 3. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
 - 4. National Gypsum Company: www.nationalgypsum.com/#sle.
 - 5. PABCO Gypsum: www.pabco gypsum.com/#sle.
 - 6. USG Corporation: www.usg.com/#sle.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use 1/2 inch thick gypsum board for vertical surfaces, unless otherwise indicated.
 - a. General:
 - 1) Thickness: 5/8 inch.
 - 2) Long Edges: Tapered.
 - b. Gypsum Board, Type X:
 - 1) Thickness: 5/8 inch.
 - 2) Long Edges: Tapered.
 - 2. Gypsum Board, Type C; Manufactured to have increased fire-resistive capability.
 - a. Thickness: As required by fire-resistance-rated assembly indicated on Drawings.
 - b. Long Edges: Tapered.
- C. Shaftwall and Coreboard: Type X; 1 inch thick by 24 inches wide, beveled long edges, ends square cut.
 - 1. Paper-Faced Type: Gypsum shaftliner board or gypsum coreboard as defined ASTM C1396/C1396M; water-resistant faces.

2.04 GYPSUM BOARD ACCESSORIES

- A. Acoustic Insulation: See Section 072100.
- B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
- C. Beads, Joint Accessories, and Other Trim: ASTM C1047, rolled zinc, unless noted otherwise.
 - 1. Corner Beads: Low profile, for 90 degree outside corners.
 - 2. Expansion Joints:
 - a. Type: V-shaped metal with factory-installed protective tape.
- D. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 - 1. Paper Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated, for interior gypsum board applications.
 - 2. For tile backing panels: As recommend in writing by panel manufacturer
 - 3. Joint Compound: Drying type, all purpose.

- a. For fill coat and finish coat.
- b. For Skim coat, level 5 finish.
 - 1) Alternate: High-build interior coating products designed for application by airless sprayer
4. Joint Compound: Setting type, taping compound.
 - a. For prefilling at open joints and damaged surface areas, embedding tape and first coat on joints fasteners, and trim flanges.
5. Joint Compound for Tile Backing Panels: as recommended in writing by panel manufacturer.
- E. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- F. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 SHAFT WALL INSTALLATION

- A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.
 1. Install studs at spacing required to meet performance requirements.
- B. Shaft Wall Liner: Cut panels to accurate dimensions and install sequentially between special friction studs.

3.03 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with AISI S220 and manufacturer's instructions.
- B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
 1. Level ceiling system to a tolerance of 1/1200.
 2. Laterally brace entire suspension system.
 3. Install bracing as required at exterior locations to resist wind uplift.
- C. Studs: Space studs at 16 inches on center unless otherwise noted on Drawings.
 1. Extend partition framing to structure where indicated and to ceiling in other locations.
 2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
 3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
- D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- E. Standard Wall Furring: Install at concrete and masonry walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.
 1. Orientation: Horizontal.
 2. Spacing: As indicated.
- F. Furring for Fire-Resistance Ratings: Install as required for fire-resistance ratings indicated and to GA-600 requirements.
- G. Blocking: Install mechanically fastened steel sheet or steel channel blocking for support of:
 1. Framed openings.
 2. Wall-mounted cabinets.

3.04 ACOUSTIC ACCESSORIES INSTALLATION

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- B. Acoustic Sealant: Install in accordance with manufacturer's instructions.

3.05 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Nonrated: Install gypsum board perpendicular to framing, with ends and edges occurring over firm bearing.
- C. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- D. Installation on Metal Framing: Use screws for attachment of gypsum board.

3.06 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints according to ASTM C840 and consistent with lines of building spaces.
- B. Corner Beads: Install at external corners, using longest practical lengths.

3.07 JOINT TREATMENT

- A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
 - 2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 - 3. Level 3: Where indicated on Drawings.
 - 4. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
 - 5. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.
 - 6. Finish glass-mat faced panels and cement back units according to manufacturer's written instructions.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
- D. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

3.08 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION 092116

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**SECTION 093000
TILING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Tiling
- B. Tile for floor applications.
- C. Tile for wall applications.
- D. Cementitious backer board as tile substrate.
- E. Non-ceramic trim.

1.02 REFERENCE STANDARDS

- A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar 2017.
- B. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 2017.
- C. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 1999 (Reaffirmed 2021).
- D. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship 2019.
- E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive 2019.
- F. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar 2021.
- G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy 1999 (Reaffirmed 2019).
- H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout 1999 (Reaffirmed 2019).
- I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout 1999 (Reaffirmed 2019).
- J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework 2017.
- K. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2018.
- L. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar 1999 (Reaffirmed 2019).
- M. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone 2005 (Reaffirmed 2021).
- N. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar 2020.
- O. ANSI A108.20 - American National Standard Specifications for Exterior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs 2020.

- P. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive 2021.
- Q. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation 2019.
- R. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units 2019.
- S. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone 2014 (Reaffirmed 2019).
- T. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation 2014 (Reaffirmed 2019).
- U. ANSI A137.1 - American National Standard Specifications for Ceramic Tile 2022.
- V. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products 2018.
- W. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation 2022.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
- C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, thresholds, and setting details.
- D. Installer's Qualification Statement.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Installer Certification: One of the Following:
 - a. Ceramic Tile Education Foundation (CTEF): Certified Tile Installer (CTI).
 - b. Apprenticeship Program: Installer has achieved Journeyworker status through an apprenticeship from the International Union of Bricklayers and Allied Craftworkers (IUBAC) or a U.S. Department of Labor (DOL)-recognized program.
 - c. Advanced Certifications for Tile Installers (ACT): Certification in the installation of membranes, mortar bed (mud) floors, mortar (mud) walls, shower receptors, large format tile, gauged porcelain tile/panels/slabs, and grouts.
 - d. International Masonry Training and Education Foundation (IMTEF): Supervisor Certification Program (SCP).

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.06 FIELD CONDITIONS

- A. Do not install solvent-based products in an unventilated environment.
- B. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

- A. Manufacturers: Provide products indicated in Materials Key on Drawings .
- B. Tile: ANSI A137.1 standard grade.

1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.
 - a. Provide floor tile in wet areas with a dynamic coefficient of friction of not less than 0.42.
2. Size: As ind.
3. Color(s) and Pattern(s): As indicated on drawings.
4. Trim Units: Matching trim in sizes indicated.

2.02 TRIM AND ACCESSORIES

1. Applications:
 - a. Transition between floor finishes of different heights:
 - 1) Floor tile to resilient flooring.
 - (a) Basis of Design: Schluter Schiene
 - 2) Floor tile to concrete.
 - (a) Basis of Design: Schluter Reno-Ramp/
 - 3) Floor tile to carpet.
 2. Manufacturers: Subject to compliance with requirements, provide Basis of Design products indicated on Drawings, or a comparable Architect-approved product by one of the following:
 - a. Schluter-Systems: www.schluter.com/#sle.
 - b. Genesis APS International: www.genesis-aps.com/#sle.
- B. Non-Ceramic Trim: Brushed stainless steel, style and dimensions to suit application, for setting using tile mortar or adhesive.
1. Applications:
 - a. Open edges of wall tile.
 - b. Wall corners, outside and inside.
 - c. Transition between floor finishes of different heights.
 - d. Floor to wall joints.
 - e. Borders and other trim as indicated on drawings.
 2. Manufacturers:
 - a. Schluter-Systems: www.schluter.com/#sle.
 - b. Genesis APS International: www.genesis-aps.com/#sle.

2.03 SETTING MATERIALS

- A. Provide setting and grout materials from same manufacturer.
- B. Manufacturers:
 1. ARDEX Engineered Cements: www.ardexamericas.com/#sle.
 2. Bostik Inc: www.bostik-us.com/#sle.
 3. Custom Building Products: www.custombuildingproducts.com/#sle.
 4. H.B. Fuller Construction Products, Inc: www.tecspecialty.com/#sle.
 5. LATICRETE International, Inc: www.laticrete.com/#sle.

2.04 GROUTS

- A. Provide setting and grout materials from same manufacturer.
- B. Manufacturers:
 1. ARDEX Engineered Cements: www.ardexamericas.com/#sle.
 2. Bostik Inc: www.bostik-us.com/#sle.
 3. Custom Building Products: www.custombuildingproducts.com/#sle.
 4. H.B. Fuller Construction Products, Inc: www.tecspecialty.com/#sle.
 5. LATICRETE International, Inc; LATICRETE PERMACOLOR Grout: www.laticrete.com/#sle.
- C. High Performance Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.
 1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.

2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
 3. Color(s): As indicated on drawings.
- D. Epoxy Grout: ANSI A118.3 chemical resistant and water-cleanable epoxy grout.
1. Applications: At Decontamination.

2.05 ACCESSORY MATERIALS

- A. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; not intended as waterproofing.
1. Crack Resistance: No failure at 1/8 inch gap, minimum.
- B. Waterproofing Membrane at Floors: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.
- C. Waterproofing Membrane at Showers: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.
- D. Underlayment at Floors: Specifically designed for bonding to thin-set setting mortar; not primarily a waterproofing material and having the following characteristics:
1. Crack Resistance: No failure at 1/16 inch gap, minimum; comply with ANSI A118.12.
 2. Uncoupling Function: Allow for separation between membrane and the mortar adhering tile to the membrane when subjected to excessive substrate movement.
 3. Suitable for installation over green concrete.
- E. Backer Board: Cementitious type complying with ANSI A118.9; high density, glass fiber reinforced, 7/16 inch thick; 2 inch wide coated glass fiber tape for joints and corners.
- F. Mesh Tape: 2 inch wide self-adhesive fiberglass mesh tape.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.
- C. Verify that subfloor surfaces are dust free and free of substances that could impair bonding of setting materials to subfloor surfaces.
- D. Cementitious Subfloor Surfaces: Verify that substrates are ready for tiling installation by testing for moisture and alkalinity (pH).
1. Test as Follows:
 2. Obtain instructions if test results are not within limits recommended by tiling material manufacturer and setting material manufacturer.
- E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
- D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

3.03 INSTALLATION - GENERAL

- A. Install tile, thresholds, and stair treads and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.20, manufacturer's instructions, and TCNA (HB) recommendations.

- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.
- E. Form internal angles square and external angles bullnosed.
- F. Install non-ceramic trim in accordance with manufacturer's instructions.
- G. Sound tile after setting. Replace hollow sounding units.
- H. Keep control and expansion joints free of mortar, grout, and adhesive.
- I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.
- J. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.
- K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

- A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.
 - 1. Use uncoupling membrane under all tile unless other underlayment is indicated.
 - 2. Where waterproofing membrane is indicated, install in accordance with TCNA (HB) Method F122, with latex-Portland cement grout.

3.05 INSTALLATION - SHOWERS WALLS

- A. At shower walls install in accordance with TCNA (HB) Method B412, over cementitious backer units with waterproofing membrane.
- B. Grout with standard grout as specified above.

3.06 INSTALLATION - WALL TILE

- A. On exterior walls install in accordance with TCNA (HB) Method W244, thin-set over cementitious backer units, with waterproofing membrane.
- B. Over cementitious backer units on studs, install in accordance with TCNA (HB) Method W244, using membrane at toilet rooms.
- C. Over gypsum wallboard on wood or metal studs install in accordance with TCNA (HB) Method W243, thin-set with dry-set or latex-Portland cement bond coat, unless otherwise indicated.
- D. Over metal studs without backer install in accordance with TCNA (HB) Method W241, mortar bed, with membrane where indicated.

3.07 CLEANING

- A. Clean tile and grout surfaces.

3.08 PROTECTION

- A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION 093000

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**SECTION 096500
RESILIENT FLOORING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient tile flooring.
- B. Resilient base.
- C. Installation accessories.

1.02 REFERENCE STANDARDS

- A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source 2019a, with Editorial Revision (2020).
- B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2022.
- C. ASTM F1700 - Standard Specification for Solid Vinyl Floor Tile 2020.
- D. ASTM F1861 - Standard Specification for Resilient Wall Base 2021.
- E. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2022.
- F. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.
- G. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
- H. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source 2023.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Shop Drawings: Indicate seaming plans and floor patterns.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- D. Protect roll materials from damage by storing on end.
- E. Do not double stack pallets.

1.05 FIELD CONDITIONS

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 TILE FLOORING

- A. Vinyl Tile (Luxury Vinyl Tile): Solid vinyl with color and pattern throughout thickness.
 - 1. Basis of Design: As indicated on Drawings.
 - 2. Minimum Requirements: Comply with ASTM F1700, of Class corresponding to type specified.

3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
4. Dimensions: As indicated on Drawings.
5. Color: As indicated on drawings.

2.02 RESILIENT BASE

- A. Resilient Base: ASTM F1861, Type TP, rubber, thermoplastic; style as scheduled.
 1. Manufacturers: Provide product as indicated on Drawings, or a comparable Architect-approved product by one of the following
 - a. Flexco Corporation: www.flexcofloors.com/#sle.
 - b. Johnsonite, a Tarkett Company: www.johnsonite.com/#sle.
 - c. Mannington Commercial: www.manningtoncommercial.com/#sle.
 - d. Roppe Corporation: www.roppe.com/#sle.
 2. Height: As indicated on Drawings.
 3. Thickness: 0.125 inch.
 4. Finish: Satin.
 5. Color: As indicated on drawings.
 6. Accessories: Premolded external corners and internal corners.

2.03 ACCESSORIES

- A. Transition Strips: Vinyl t-molding, size as required for thickness of flooring, color as indicated on Drawings. Comply with ICC A117.1.
 1. Install at transitions from carpet-to-vinyl flooring.
 2. Manufacturers: Subject to compliance with requirements, provide Basis of Design product as indicated on Drawings, or a comparable Architect-approved product by one of the following:
 - a. Johnsonite, a Tarkett Company: www.johnsonite.com/#sle.
 - b. Mannington Commercial: www.manningtoncommercial.com/#sle.
 - c. Roppe Corporation: www.roppe.com/#sle.
- B. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- C. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
 1. Test as Follows:
 - a. Alkalinity (pH): ASTM F710.
 - b. Internal Relative Humidity: ASTM F2170.
 - c. Moisture Vapor Emission: ASTM F1869.
 2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.

- C. Prohibit traffic until filler is fully cured.
- D. Clean substrate.

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.

3.04 INSTALLATION - TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.
- B. Install tile in pattern as indicated on Drawings.

3.05 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION 096500

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**SECTION 096813
TILE CARPETING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpet tile, fully adhered.

1.02 REFERENCE STANDARDS

- A. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials 2016 (Reapproved 2021).
- B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source 2019a, with Editorial Revision (2020).
- C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2022.
- D. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.
- E. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source 2023.

1.03 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

1.04 FIELD CONDITIONS

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Tile Carpeting: Tufted, manufactured in one color dye lot.
 - 1. Product: Provide product as indicated in Materials Key on Drawings.
 - 2. Dimensions: As indicated on Drawings.
 - 3. Color and Pattern: As indicated on Drawings.
 - 4. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
 - 5. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").

2.02 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.
- B. Edge Strips: Embossed aluminum, color as selected by Architect.
- C. Carpet Tile Adhesive: As recommended by carpet tile manufacturer; releasable type.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
 - 1. Test as Follows:
 - a. Alkalinity (pH): ASTM F710.

- b. Internal Relative Humidity: ASTM F2170.
- 2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.
- D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- B. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.
- C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- D. Vacuum clean substrate.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions.
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
- F. Fully adhere carpet tile to substrate.
- G. Trim carpet tile neatly at walls and around interruptions.
- H. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

- A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- B. Clean and vacuum carpet surfaces.

END OF SECTION 096813

**SECTION 099113
EXTERIOR PAINTING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
 - 5. Floors, unless specifically indicated.
 - 6. Glass.
 - 7. Concealed pipes, ducts, and conduits.

1.02 REFERENCE STANDARDS

- A. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.
- B. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- C. SSPC-SP 2 - Hand Tool Cleaning 2018.
- D. SSPC-SP 6 - Commercial Blast Cleaning 2007.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.04 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
- B. Paints:
 - 1. Behr Process Corporation: www.behr.com/#sle.
 - 2. Cloverdale Paint, Brand Products of Rodda Paint Company: www.cloverdalepaint.com/#sle.
 - 3. Diamond Vogel Paints: www.diamondvogel.com/#sle.
 - 4. PPG Paints: www.ppgpaints.com/#sle.

5. Rodda Paint Company: www.roddapaint.com/#sle.
6. Sherwin-Williams Company: www.sherwin-williams.com/#sle.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.
 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 2. Supply each paint material in quantity required to complete entire project's work from a single production run.
 3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

2.03 PAINT SYSTEMS - EXTERIOR

- A. Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including primed metal.
 1. Top Coat(s): Exterior Light Industrial Coating, Water Based; MPI #161, 163, or 164.
 - a. For use on metal surfaces where minimal corrosion protection is needed.
 - b. Primer: Water-Based Anti-Corrosive for Metal; Refer to Section 099600 - High-Performance Coatings.
 - c. Products:
 - 1) Cloverdale Paint, EcoLogic, Ultra Low VOC Ecologic Waterborne.
 - 2) PPG Architectural, Protective and Marine Coatings, Pitt-Tech Plus EP DTM Acrylic.
 - 3) Rust-Oleum, Rust-Oleum, Industrial Choice 5200 System DTM Acrylic.
 - 4) Sherwin-Williams Pro Industrial DTM Acrylic.

2.04 PRIMERS

- A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
 1. Water Based Primer for Galvanized Metal; MPI #134.
 - a. Products:
 - 1) Behr Premium Plus Interior/Exterior Multi-Surface Primer and Sealer [No.436]. (MPI #134)
 - 2) PPG Paints Pitt-Tech Plus EP DTM Industrial Primer, 90-1912. (MPI #134)
 - 3) Sherwin-Williams DTM Primer/Finish (MPI #134)
 - 4) Sherwin-Williams Pro Industrial Pro-Cryl Universal Primer. (MPI #134)
 2. Water-based Acrylic Coating for prefinished metal.
 - a. Single component, waterborne acrylic, formulated for direct application to pre-finished metal siding, including PVDF, FEVE, and polyester coatings.
 - b. Products:
 - 1) Sherwin-Williams Bond-Plex Waterbased Acrylic Coating, B71-200 Series

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Galvanized Surfaces:
 - 1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
 - 2. Prepare surface according to SSPC-SP 2.
- G. Ferrous Metal:
 - 1. Solvent clean according to SSPC-SP 1.
 - 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
 - 3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 Commercial Blast Cleaning. Protect from corrosion until coated.

3.03 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- E. Apply each coat to uniform appearance.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

3.06 SCHEDULE

- A. Refer to Schedule at end of Section.099600 - High-Performance Coatings for systems using High Performance Coatings and Exterior Coatings as part of complete system..
- B. Exterior Pre-Finished Metal:

CSHQA, Inc.
Bid and Permit Set
January 20, 2023

ITD Maintenance Building Improvements
Caldwell, Idaho
Project No.: 22123.000

1. Primer: Water-based acrylic coating.
2. Finish: Exterior Light Industrial Coating; two coats.

END OF SECTION 099113

**SECTION 099123
INTERIOR PAINTING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
 - 5. Floors, unless specifically indicated.
 - 6. Glass.
 - 7. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

- A. Section 099113 - Exterior Painting.

1.03 REFERENCE STANDARDS

- A. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association Current Edition.
- B. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.
- C. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- D. SSPC-SP 6 - Commercial Blast Cleaning 2007.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
 - 2. MPI product number (e.g., MPI #47), if appli.
 - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
 - 4. Manufacturer's installation instructions.
 - 5. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply materials when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F above the dew point, or to damp or wet surfaces.
- D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
- B. Paints:
 - 1. Behr Process Corporation: www.behr.com/#sle.
 - 2. Diamond Vogel Paints: www.diamondvogel.com/#sle.
 - 3. PPG Paints: www.ppgpaints.com/#sle.
 - 4. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
- C. Primer Sealers: Same manufacturer as top coats.
- D. Substitutions: See Section 016000 - Product Requirements.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
 - 1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
 - 2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 - 4. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
 - 5. Supply each paint material in quantity required to complete entire project's work from a single production run.
 - 6. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Flammability: Comply with applicable code for surface burning characteristics.
- C. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

2.03 PAINT SYSTEMS - INTERIOR

- A. Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board.
 - 1. Two top coats and one coat primer.
 - 2. Top Coat(s): Institutional Low Odor/VOC Interior Latex; MPI #143, 144, 145, 146, 147, or 148.
 - a. Products:
 - 1) Behr Pro i300 Interior, sheen as indicated on Drawings.

- 2) PPG Paints Speedhide Zero Interior Latex, 6-4110XI Series, sheen as indicated on Drawings.
 - 3) Sherwin-Williams ProMar 400 Zero VOC Interior Latex, sheen as indicated on Drawings.
- B. Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals:
1. Medium duty applications include doors, door frames, railings, and handrails.
 2. Two top coats and one coat primer.
 3. Top Coat(s): High Performance Architectural Interior Latex; MPI #138, 139, 140, or 141.
 - a. Products:
 - 1) PPG Paints Pure Performance Interior Latex, gloss as indicated on Drawings.
 - 2) Sherwin-Williams Pro Industrial Pre-Catalyzed Waterbased Epoxy, gloss as indicated on Drawings.
- C. Medium Duty Vertical and Overhead: Including uncoated steel, shop primed steel, and galvanized steel.
1. Two top coats and one coat primer.
 2. Top Coat(s): Interior Epoxy-Modified Latex; MPI #115 or 215.
 - a. Products:
 - 1) PPG Paints Aquapon WB EP Two-Component Waterborne Epoxy Coating, gloss as selected by Architect.
 - 2) Sherwin-Williams Waterbased Catalyzed Epoxy, gloss as indicated on Drawings.
- D. Dry Fall: Metals; exposed structure and overhead-mounted services in utilitarian spaces.
1. Shop primer by others.
 2. One top coat.
 3. Top Coat: Latex Dry Fall; MPI #118, 155, or 226.
 - a. Products:
 - 1) PPG Paints Speedhide Super Tech Water Based Interior Dry-Fog Latex, 6-725XI Series, Flat. (MPI #118)
 - 2) Sherwin-Williams Waterborne Acrylic Dryfall, Flat. (MPI #118)

PART 3 EXECUTION

3.01 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
- F. Galvanized Surfaces:
- G. Ferrous Metal:
 1. Solvent clean according to SSPC-SP 1.
 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
 3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 Commercial Blast Cleaning. Protect from corrosion until coated.

3.02 APPLICATION

- A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

END OF SECTION 099123

**SECTION 099600
HIGH-PERFORMANCE COATINGS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. High performance coatings.
- B. Surface preparation.

1.02 RELATED REQUIREMENTS

- A. Section 099113 - Exterior Painting.
- B. Section 099123 - Interior Painting: Requirements for mechanical and electrical equipment surfaces.

1.03 REFERENCE STANDARDS

- A. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.
- B. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- C. SSPC-SP 6 - Commercial Blast Cleaning 2007.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide complete list of all products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - 2. MPI product number (e.g. MPI #47), where applicable.
 - 3. Cross-reference to specified coating system(s) product is to be used in; include description of each system.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of coating, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Coating Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

- A. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- B. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the coating product manufacturer.
- C. Do not install materials when temperature is below 55 degrees F or above 90 degrees F.
- D. Maintain this temperature range, 24 hours before, during, and 72 hours after installation of coating.
- E. Restrict traffic from area where coating is being applied or is curing.

1.07 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for bond to substrate.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide high performance coating products from the same manufacturer to the greatest extent possible.
- B. High-Performance Coatings:
 - 1. Behr Process Corporation: www.behr.com/#sle.
 - 2. Benjamin Moore: www.benjaminmoore.com/#sle.
 - 3. PPG Paints: www.ppgpaints.com/#sle.
 - 4. Sherwin-Williams Company: www.protective.sherwin-williams.com/industries/#sle.
 - 5. Tnemec Company, Inc: www.tnemec.com/#sle.
 - 6. Substitutions: Section 016000 - Product Requirements.

2.02 HIGH-PERFORMANCE COATINGS

- A. Provide coating systems that meet the following minimum performance criteria, unless more stringent criteria are specified:

2.03 TOP COAT MATERIALS

- A. Coatings - General: Provide complete multi-coat systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated; number of coats specified does not include primer or filler coat.
- B. Water-based Light Industrial Coating; MPI #161, #163, #164
 - 1. Products:
 - a. Behr Paint, Behr Premium Interior-Exterior Direct to Metal, X200
 - b. Benjamin Moore, Ultra Spec HP DTM. Acrylic, HP2X/FP2X
 - c. PPG, Protective and Marine Coatings Pitt-Tech Plus EP DTM Acrylic Satin90-1X10
 - d. Sherwin-Williams; Pro Industrial DTM Acrylic 66W01X51.
- C. High-Build Epoxy Coating:
 - 1. Top Coat(s): Epoxy, High-Build; MPI #98, #108, #120.
 - a. Products:
 - 1) Benjamin Moore, Corotech, Polyamide Epoxy
 - 2) PPG Architectural, Protective and Marine Coatings, Amerlock
 - 3) PPG Architectural, Protective and Marine Coatings, Aquapon High Build Epoxy
 - 4) Sherwin-Williams; Macropoxy 646 Fast Cure Epoxy: www.protective.sherwin-williams.com/#sle.
- D. Two-Component Polysiloxane / Epoxy Siloxane Hybrid Coating:
 - 1. Products:
 - a. PPG PSX 700.
 - b. Sherwin-Williams, Sherloxane 800, B80-500 Series.
- E. Refer to Section 099113 - Exterior Painting for additional exterior coating systems.

2.04 PRIMERS

- A. Primers: Provide the following unless other primer is required or recommended by coating manufacturer.
 - 1. High-Build Epoxy Primer:
 - a. Products:
 - 1) Benjamin Moore, Corotech, Polyamide Epoxy
 - 2) PPG Architectural, Protective and Marine Coatings, Amerlock
 - 3) PPG Architectural, Protective and Marine Coatings, Aquapon High Build Epoxy
 - 4) Sherwin-Williams; Macropoxy 646 Fast Cure Epoxy: www.protective.sherwin-williams.com/#sle.
 - 2. Primer: Zinc rich primer; MPI #18.
 - a. Products:

- 1) Cloverdale Paint, Cloverdale, ClovaZinc 1 Organic Zinc Rich Primer.
 - 2) Diamond Vogel, Endura Zinc 705, Organic Zinc Rich Epoxy, Ester Primer.
 - 3) Sherwin-Williams, Protective & Marine, Corothane I Galvapac 1K Zinc Primer.
3. Water-Based Anti-Corrosive for Metal; MPI #301.
- a. Products:
 - 1) PPG Paints; Aquapon WB EP Two-Component Waterborne Epoxy Primer, 98E-46/98E-99 Series: www.ppgpaints.com/#sle.
 - 2) Sherwin-Williams, Pro Industrial Pro-Cryl Universal Primer, B66W1310.
 - 3) Tnemec Company, Inc; Series 1224 Epoxoline WB Primer: www.tnemec.com/#sle.

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of coated surfaces.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Do not begin application of coatings until substrates have been properly prepared.
- C. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer. Obtain and follow manufacturer's instructions for examination and testing of substrates.
- D. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- E. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- F. Test shop-applied primer for compatibility with subsequent cover materials.
- G. Proceed with coating application only after unacceptable conditions have been corrected.
 1. Commencing coating application constitutes Contractor's acceptance of substrates and conditions.

3.02 PREPARATION

- A. Protect adjacent surfaces and materials not receiving coating from spatter and overspray; mask if necessary to provide adequate protection. Repair damage.
- B. Clean surfaces of loose foreign matter.
- C. Remove substances that would bleed through finished coatings. If unremovable, seal surface with shellac.
- D. Remove finish hardware, fixture covers, and accessories and store.
- E. Ferrous Metal:
 1. Solvent clean according to SSPC-SP 1.
 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
 3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning", and protect from corrosion until coated.

3.03 PRIMING

- A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

3.04 COATING APPLICATION

- A. Apply coatings in accordance with manufacturer's written instructions, to thicknesses specified and recommendations in MPI - Architectural Painting and Specification Manual.
- B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

3.05 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Clean surfaces immediately of overspray, splatter, and excess material.
- C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

3.06 PROTECTION

- A. Protect finished work from damage.

3.07 SCHEDULE

- A. Colors: As selected by Architect or as indicated on Drawings.
- B. Gloss Levels: As selected by Architect or as indicated on Drawings.
- C. Exterior Steel: Minimal Corrosion Protection:
 - 1. Primer: Water-based anti-corrosive for metal.
 - 2. Finish: Water-based exterior light industrial coating, two coats. Refer to Section 099113 - Exterior Painting.
- D. Exterior Steel: Moderate Corrosion Protection:
 - 1. Primer for Heavy Rusted Steel: Macropoxy 920 Pre-Prime, B58T101. Data Page
 - 2. Primer For Bare Steel: High-build epoxy primer.
 - 3. Finish: Two-component polysiloxane / epoxy siloxane hybrid.coatings; one to two coats.
- E. Exterior Steel: Elevated Corrosion Resistance:
 - 1. Prepare steel surfaces in compliance with SSPC-SP 6.
 - 2. Primer: Zinc rich primer.
 - 3. Intermediate: High-build epoxy coating.
 - 4. Finish: Two-component polysiloxane / epoxy siloxane hybrid.coatings; one to two coats.
- F. Exterior Galvanized Metal
 - 1. Primer: High-build epoxy prime at 2-4mils DFT..
 - 2. Finish: Two-component polysiloxane / epoxy siloxane hybrid.coatings; one to two coats.
- G. Exterior Pre-Finished Metal: Refer to schedule at end of Section 099113 - Exterior Painting

END OF SECTION 099600

**SECTION 102800
TOILET, BATH, AND LAUNDRY ACCESSORIES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Commercial toilet accessories.
- B. Commercial shower accessories.
- C. Utility room accessories.

1.02 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service 2022.
- C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- D. ASTM B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium 2017 (Reapproved 2022).
- E. ASTM C1036 - Standard Specification for Flat Glass 2021.
- F. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror 2018.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Commercial Toilet, Shower, and Bath Accessories:
 - 1. AJW Architectural Products: www.ajw.com/#sle.
 - 2. American Specialties, Inc: www.americanspecialties.com/#sle.
 - 3. Bobrick: www.bobrick.com/#sle
 - 4. Bradley Corporation: www.bradleycorp.com/#sle.
 - 5. Georgia-Pacific Professional: www.gppro.com/#sle.
 - 6. Kimberly-Clark Corporation: www.kcprofessional.com/#sle.

2.02 MATERIALS

- A. Accessories - General:
 - 1. Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
 - 2. Obtain products to the greatest extent possible from a single vendor, from a single manufacturer.
- B. Keys: Provide 3 keys for each accessory to Owner; master key lockable accessories.
- C. Stainless Steel Sheet: ASTM A666, Type 304.
- D. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.
- E. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.
- F. Adhesive: Two component epoxy type, waterproof.

- G. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

2.03 FINISHES

- A. Stainless Steel: Satin finish, unless otherwise noted.
B. Chrome/Nickel Plating: ASTM B456, SC 2, polished finish, unless otherwise noted.

2.04 COMMERCIAL TOILET ACCESSORIES

- A. Toilet Paper Dispenser: Double roll, surface mounted bracket type, stainless steel.
B. Soap Dispenser: Liquid soap dispenser, wall-mounted, surface, with stainless steel cover and horizontal stainless steel tank and working parts; push type soap valve, check valve, and window gauge refill indicator, tumbler lock.
C. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
1. Annealed Float Glass: Silvering, protective and physical characteristics in compliance with ASTM C1503.
2. Size: As indicated on drawings.
3. Frame: 0.05 inch angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
4. Backing: Full-mirror sized, minimum 0.03 inch galvanized steel sheet and nonabsorptive filler material.
D. Seat Cover Dispenser: Stainless steel, surface-mounted, reloading by concealed opening at base, tumbler lock.
1. Minimum capacity: 250 seat covers.
E. Grab Bars: Stainless steel, smooth surface.
1. Standard Duty Grab Bars:
a. Push/Pull Point Load: 250 pound-force, minimum.
b. Dimensions: 1-1/4 inch outside diameter, minimum 0.05 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
c. Finish: Satin.
d. Length and Configuration: As indicated on drawings.
F. Sanitary Napkin Disposal Unit: Stainless steel, surface-mounted, self-closing door, locking bottom panel with full-length stainless steel piano-type hinge, removable receptacle.

2.05 COMMERCIAL SHOWER ACCESSORIES

- A. Shower Curtain Rod: Stainless steel tube, 1 inch outside diameter, 0.04 inch wall thickness, satin-finished, with 3 inch outside diameter, minimum 0.04 inch thick satin-finished stainless steel flanges, for installation with exposed fasteners.
B. Shower Curtain:
1. Material: Opaque vinyl, 0.008 inch thick, matte finish, with antibacterial treatment, flameproof and stain-resistant.
2. Size: 36 by 72 inches, hemmed edges.
3. Grommets: Stainless steel; pierced through top hem on 6 inch centers.
4. Color: White.
5. Shower Curtain Hooks: Chrome-plated or stainless steel spring wire designed for snap closure.
C. Folding Shower Seat: Wall-mounted surface; welded tubular seat frame, structural support members, swing-down legs, hinges, and mechanical fasteners of Type 304 stainless steel, L-shaped, right hand seat.
1. Seat: One-piece, pan-type, 0.05 inch stainless steel sheet, Type 304. Weld seams and grind smooth.
2. Size: ADA Standards compliant. See Drawings.
D. Robe Hook: Heavy-duty stainless steel, single-prong, rectangular-shaped bracket and backplate for concealed attachment, satin finish.

2.06 UTILITY ROOM ACCESSORIES

- A. Mop and Broom Holder: 0.05 inch thick stainless steel, Type 304, hat-shaped channel.
 - 1. Holders: Three spring-loaded rubber cam holders.
 - 2. Length: Manufacturer's standard length for number of holders.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.

3.02 PREPARATION

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

- A. Install accessories in accordance with manufacturers' written instructions in locations indicated on drawings.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights: As indicated on Drawings and as required by accessibility regulations.

3.04 PROTECTION

- A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION 102800

SECTION 211313

FIRE SPRINKLER SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- B. Requirements of Mechanical General Provisions Sections govern the work specified in this section except the standards of NFPA #13 shall take precedence.

1.2 DESCRIPTION OF WORK

- A. Furnish all materials, equipment and supplies and perform all work and operations to design, install and test a fire sprinkler system to protect all areas of the Idaho Department of Transportation building (including proposed expansion area on north side) located in Caldwell, ID. The design of the fire sprinkler system shall meet the requirements of NFPA 13, 2016 edition and be in accordance with the drawings and specifications.

1.3 QUALITY ASSURANCE

- A. Materials, devices and equipment shall be Underwriters Laboratories listed or Factory Mutual approved for use in fire protection systems.
- B. Shop drawings shall be prepared by an engineering technician or senior engineering technician (Level III or Level IV) NICET certified for fire sprinkler design. Include NICET certification number on the drawings. Drawings will be signed by the technician and submitted for approval under his name.
- C. Fire sprinkler contractor shall be licensed as a fire sprinkler contractor in the State of Idaho.

1.4 SUBMITTALS

- A. Descriptive Data: Descriptive data shall be submitted on the following items of material and/or equipment. Such data shall consist of manufacturer's or supplier's catalog information in sufficient detail to allow verification that the material and/or equipment meets the specification requirements or is equal to that specified.
 - 1. All control valves, check valves, pipe, fittings, couplings, pipe supports, pipe braces, sprinklers, FDC, valve tamper and water flow alarm devices.
- B. Prior to fabrication, prepare shop drawings for submittal to Architect. Submit four sets of drawings and hydraulic calculations to the Architect for review. After review and acceptance by the Architect, submit to any state or local jurisdiction for review. Any review comments, and associated drawing revisions, from state or local approving authorities that affect the system design shall be approved by the Architect prior to installation.

- C. Upon completion of system installation, the contractor shall document a 2-inch drain test, inspect the general system installation and verify the installation is complete and installed according to the approved drawings and specifications. Minor corrections and/or additions to the drawings should be “red-lined” on the As-Built drawings. Contractor shall submit As-Built drawings, and test certificates to Owner and to Architect.
- D. Fabrication or installation shall not proceed until all required approvals have been obtained.

1.6 SYSTEM DESCRIPTION

- A. Provide an automatic fire sprinkler system per NFPA 13 (2016 edition) to provide fire protection of all portions (existing and proposed additions) of the building. Work includes but is not limited to the following:
 - 1. Install fire sprinkler riser in Office Storage 115 as indicated on drawings. The fire riser shall include butterfly pattern control valve, riser check valve, pressure gauges, 2” main drain with discharge to the exterior, water flow and valve tamper switches. See fire sprinkler riser schematic included on drawings.
 - 2. Provide a 2-way fire department connection (FDC) on south, exterior wall of building near the existing fire hydrant (supplied by well pump). FDC shall be wall mounted 36” above exterior grade. Coordinate location with Fire Department and Architect.
 - 3. Provide fire sprinklers to protect all areas of building including any combustible concealed spaces (attic spaces and/or crawlspaces).
 - 4. Water filled piping shall be installed in areas where the temperature will be reliably maintained at or above 40° F. Where piping must be installed in areas with temperatures below 40°F, provide one of the following 2 options for freeze protection of piping (listed in preferred order):
 - a. Protect area with dry-type (upright, pendent or sidewall) fire sprinklers with water filled piping installed in heated area and dry sprinklers extending into cold space.
 - 5. Piping shall be concealed above ceilings where present and may be run exposed in areas without ceilings. Piping below 2nd floor offices may be run exposed below existing ceilings. Exposed piping shall be installed as high as possible in the space to maximize headroom.
 - 6. Coordinate elevation and layout of piping with mechanical, structural, electrical and plumbing equipment. Offset piping as necessary to avoid conflicts.
 - 7. Provide an electric water flow bell on the exterior of the building near the location of the wall mounted FDC. Coordinate location and mounting height of water flow bell with Architect.
 - 8. Install additional fire sprinklers in accordance with NFPA 13 to protect below fixed obstructions in excess of 48” in width.
 - 9. Install hydraulic design information sign (per NFPA 13 24.5) and general information sign (per NFPA 13 24.6) at each fire sprinkler riser.
 - 10. Install piping pitched to drain back to main drain at fire sprinkler riser. Where piping must be trapped due to changes in roof deck elevation, provide auxiliary drains as required by NFPA 13 to facilitate drainage of piping.

1.8 SYSTEM DESIGN

A. Design densities and areas of application.

1. Ordinary Hazard Group 2: Vehicle Bays, Maintenance Bays, Storage, Electrical, Communications, Mechanical, Janitorial and similar areas – 0.20 gpm/sq. ft. over 1,500 sq. ft. with 250 gpm hose allowance. Increase design area by 30% per NFPA 13 for roof slope greater than 2:12 in Maintenance Bays.
2. Offices, Lobbies, Restrooms, Conference Rooms, Corridors and similar areas: Light hazard, 0.10 gpm/sq. ft. over 1,500 sq. ft. with 100 gpm hose allowance.
3. The size of the remote area may be decreased in accordance with NFPA 13 where quick response sprinklers are used and the ceiling height is less than 20’.

B. Maximum coverage per sprinkler head.

1. Ordinary Hazard: 130 sq. ft.
2. Light Hazard: 225 sq. ft.

C. Fire protection water to be supplied by an on-site fire protection water storage tank and fire pump. Hydraulic calculations for the fire sprinkler system shall extend to the discharge of the fire pump. The following pressures and flow may be used for design of the fire sprinkler system:

Churn Pressure:	72 psi
Rated Pressure:	60 psi
Rated Flow:	5000 gpm

D. Provide a minimum pressure margin (available pressure vs. required pressure) of 10% in the hydraulic calculations for fire sprinkler system.

1.9 WARRANTY

- A. Materials, equipment, and workmanship shall be free from defects for 12 months from the "Date Left in Service with All Control Valves Open," shown on "Contractor's Material and Test Certificate." If any Work is found to be defective, Contractor shall promptly, without cost to Owner, and in accordance with Owner's instructions, either correct such defective Work, or if it has been rejected by Owner, remove it from the site and replace it with non-defective Work. Submit two copies of Warranty Certificates to Architect.

1.10 REFERENCES

- A. NFPA 13, "Installation of Sprinkler Systems," 2016.
- B. IBC (International Building Code), 2018.
- C. IFC (International Fire Code), 2018 and any local amendments.
- D. Underwriters Laboratories "Fire Protection Equipment Directory," current edition.
- E. Factory Mutual Systems "Approval Guide," current edition.

PART II - PRODUCTS

2.01 Materials, devices and equipment shall be Underwriters Laboratories listed or Factory Mutual approved for use in fire protection systems.

2.02 PIPE

A. Interior Piping:

1. All piping shall be steel and shall meet or exceed the following standards: ASTM A795, ANSI/ASTM A53, ASTM A135, ANSI B36-10M, UL CRR (Corrosion Resistance Rating) minimum 1.0 for threaded pipe.

2.03 FITTINGS

A. Interior Piping

1. Cast iron threaded, ANSI B16.4
2. Cast iron flanged, ANSI B16.1
3. Malleable iron threaded, ANSI B16.3
4. Forged steel fitting, socket welded and treaded, ANSI B16.11
5. Plain end couplings and fittings are not acceptable.
6. Other types of fittings may be used, but only those investigated and listed for this service **and** approved by the project engineer.

2.04 HANGERS

A. Hangers shall conform to the minimum requirements of NFPA 13.

2.05 SEISMIC FITTINGS AND BRACES

A. Earthquake bracing is required and shall conform to the minimum requirements of NFPA 13.

2.06 SPRINKLERS

- A. Areas without ceilings: Small frame upright, ordinary temperature, brass, glass bulb fire sprinklers. Fire sprinklers in Maintenance bay shall have a minimum K-factor of 8.0.
- B. Areas with finished ceilings: Quick response, pendent, white painted, glass bulb type fire sprinkler with recessed escutcheon, 1/2" orifice, and 165° F temperature rating.
- C. Sprinklers of intermediate and high temperature ratings shall be installed in attic spaces or near skylights and/or other specific locations as required by NFPA 13.
- D. One spare head of each type for spare head cabinet and one head wrench for each type sprinkler. Provide a complete list of fire sprinklers installed in the property in accordance with NFPA 13. Place list inside spare fire sprinkler cabinet.
- E. Provide quick response type sprinkler heads in accordance with NFPA 13 in all light hazard areas.

2.07 VALVES

A. Fire Sprinkler Risers:

1. OS&Y or butterfly pattern control valves with installed supervisory switches. Control valves shall be part of UL listed backflow prevention assembly.
2. Riser check valve with 2" main drain outlet and pressure gauges.
3. 2" angle valve for main drain.

B. Fire Department Connections:

1. Swing pattern, grooved end check valve.
2. 1/2" automatic ball drip.

2.08 FIRE DEPARTMENT CONNECTION

- A. Provide a chrome plated, 2-way x 2-1/2" wall mount fire department connection with national standard threads, breakable caps and permanent escutcheon labeled "Auto. Spkr. Configure fire department connection to allow manual pressurization of all fire sprinkler piping inside building.

2.09 ALARM DEVICES

A. Sprinkler Risers

1. Valve tamper switches: The valve tamper switches shall be SPDT electrical switches rated for 125 Vac for monitoring the position of control valves, UL listed, and FM approved.
2. Water flow switches: Furnish and install a water flow detector on each fire sprinkler riser, designed for wet pipe sprinkler systems, listed by UL and approved by Factory Mutual. Detector shall be a vane type water flow switch installed on the system piping downstream of control valve. Activation of switch shall provide actuation of two SPDT switches rated for 125 Vac at water flows of 10 gpm or greater.

B. Exterior

1. Provide and install a 6" electric bell on the exterior of building near the fire department connection. Coordinate location and mounting height with architect. Device to be wired to power supply and flow switch by electrical contractor.

PART III – EXECUTION

3.01 INSPECTION

- A. Examine areas and conditions under which each fire sprinkler system is to be installed and notify General Contractor in writing of conditions detrimental to proper completion of the work. Do not proceed with work until unsatisfactory conditions have been corrected in an acceptable manner.

3.02 INSTALLATION

- A. Install each system in compliance with methods detailed in NFPA 13, including seismic requirements for potential for earthquake damage.
- B. Offset as needed for other trades. Avoid conflict in areas of tight construction. Do not obstruct access to air control boxes, access doors, lights or other ceiling mounted equipment.
- C. Close pipe openings with caps or plugs during installation. Cover and protect components of the system against dirt and chemical or mechanical injury.
- D. Provide concrete splash blocks for drains and test valve discharge, etc. Concrete splash blocks shall be pre-fabricated, 2-1/2" thick, Amcor or Engineer approved equal.
- E. Water filled piping shall only be installed in areas where temperatures will not drop below 40°F. provide one of the following 2 options for freeze protection of piping (listed in preferred order):
 - a. Protect area with dry-type (upright, pendent or sidewall) fire sprinklers with water filled piping installed in heated area and dry sprinklers extending into cold space.
 - b. Install an auxiliary dry-pipe system complying with all applicable requirements of NFPA 13.
- F. Contractor is responsible for making his own job check and any necessary adjustments in the design prior to fabrication. Make final coordination with other trades and offset piping and heads as necessary. Major conflicts shall be brought to the attention of the General Contractor for resolution by the Architect.
- G. Do not connect to underground water supply mains provided by others without receiving a copy of the "Contractor's Material and Test Certificate" covering flushing and pressure testing of the mains.

3.03 FIELD QUALITY CONTROL

- A. Obtain permits and post bonds as required by state and local AHJ's (Authorities Having Jurisdiction).
- B. Inform AHJ's of job progress. Request presence of AHJ's, perform tests, and document results using Contractor's Material and Test Certificates.

3.04 TESTING

- A. The following documents shall be provided to Project Architect PRIOR to the final inspection
 - 1. Contractor's Material and Test Certificate for Above Ground Piping
- B. Make and pay for all tests required by applicable codes during and after completion of the work and correct and defects in the systems indicated by the tests.
- C. Hydrostatically test all new system piping for two hours at 200 psi with no loss in pressure and no visible leakage. Conduct the testing after all of the fire sprinkler heads and piping are installed. Have the tests witnessed by the AHJ's and Engineer. Submit a Contractor's Material and Test Certificate to the Architect upon successful completion of the testing.

- D. Final Acceptance Test: Final acceptance test shall begin only when the Preliminary Test Report has been approved. The Fire Sprinkler Installer shall conduct the Final Acceptance Test and shall provide a complete demonstration of the operation of the system. This shall include operation of control valves and flowing of inspector's test connections to verify operation of associated water flow alarm switches. After operation of control house has been completed, the main drain test shall be repeated to ensure that control valves are in the open position. In addition, the Contractor's representative shall have available copies of as built drawings and certificates of tests previously conducted. The installation shall not be considered accepted until identified discrepancies have been corrected and test documentation is properly completed and received.
- E. Train the Owner's maintenance personnel in the proper operation, testing and maintenance of all installed equipment.
- F. The Contractor shall provide a current editions of NFPA 25, "Standard for the Inspection, Testing and Maintenance of Water Based Fire Protection Systems" to the location's maintenance organization responsible for maintaining the fire protection system.

3.05 DISINFECTION

- A. Disinfect piping when and as required by local jurisdiction

3.06 CLEANING

- A. Remove oil, scale, debris, and foreign substances from interior and exterior of devices, equipment, and materials prior to installation.
- B. Upon job completion, remove tools, surplus materials and equipment, leaving all areas broom clean.

3.02 ACCEPTANCE

- A. Acceptance of installation is subject to final inspection and approval by:
 - 1. Project Architect
 - 2. Project Engineer
 - 3. Local Building and Fire Officials.

END OF SECTION 211313

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