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Addendum Number Two

DATE: April 25, 2024

PROJECT: FM42414 - ITD D4 Stanley HUD Manufactured Home & Site Design

PROJECT NO.: 23607

OWNER: Idaho Transportation Department
11331 W. Chinden Blvd., Bld. 8
Boise, Idaho 83714

ARCHITECT: Myers Anderson Architects, PLLC
122 South Main Street, Suite 1
Pocatello, Idaho 83204

TO: Prospective Bidders

This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated April 2024.

Acknowledge receipt of this Addendum in the space provided in the Bid Form. Failure to do so may disqualify the Bidder.

This Addendum consists of one (1) page plus attachments. **Total: two hundred sixty-two (262) pages.**

General

1. The project name has been modified. Revised Bid Specifications and Drawings with the correct name are attached. No other changes have been made to the bid documents. Be sure to submit your bid on the Bid Form provided in the revised Bid Specification.
2. The Geotechnical Investigation prepared by Atlas Technical Consultants LLC dated April 23, 2024 is attached for reference.

Attachments

Bid Specifications
Bid Drawings
Geotechnical Investigation

End of Addendum No. 2

Idaho Office
122 South Main Street, Suite 1
Pocatello, Idaho 83204
P 208.232.3741
F 208.232.3782
www.myersanderson.com

Invitation to Bid (ITB) FM42414

ITD D4 Stanley HUD Manufactured Home & Site Design

IDAHO TRANSPORTATION DEPARTMENT

District 4
216 S Date Street
Shoshone, Idaho 83352

Date of Issuance: April 2024

Administrative Information

ITB Title:	ITD D4 Stanley HUD Manufactured Home and Site Design
ITB Project Description:	The scope of this project is for a new manufactured home unit (MHU) on the existing ITD Stanley site. It is the responsibility of the contractor to develop the site and provide MHU foundation per structural with mechanical, plumbing and electrical for the MHU per the full set of drawings. The MHU is to be site delivered once foundation is complete. Hook-up all utilities, crawl space skirting installed, and canopy roofs with stairs & landing installed as part of the project completion.
ITB Lead:	Jacob Jackson Facilities Management Contracting Officer Idaho Transportation Department 11331 W Chinden Blvd., Bld. 8 Boise, Idaho 83714 E-mail: Jacob.jackson@itd.idaho.gov Phone: (208) 334-8831
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
Pre-Bid Conference: Pre-Bid Conference Location:	11:00 a.m. (MT) on April 18, 2024 Idaho Transportation Department 4821 ID-21 Stanley, ID 83278
Deadline To Receive Questions:	4:00 p.m. (MT) on April 18, 2024
ITB Closing Date:	1:59:59 p.m. (MT) on April 24, 2024
ITB Opening Date:	2:00 p.m. (MT) on April 24, 2024 Idaho Transportation Dept. 11331 W Chinden Blvd., Bld. 8 Boise, Idaho 83714

Initial Term of Contract and Renewals (service completion):	The service performed under the contract will begin upon ITD's written Notice to Proceed must be completed within **120 days.**

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ADVERTISEMENT FOR BIDS

In accordance with Idaho Code 67-5711, The Idaho Transportation Department will accept sealed bids for Project # **FM42414 ITD D4 Stanley HUD Manufactured Home & Site Design.** Bids packets will be accepted at the Idaho Transportation Department at 11331 W Chinden Blvd., Bld. 8, Boise, Idaho 83714, **until 1:59:59 p.m. local time on April 24, 2024**. 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 new manufactured home unit (MHU) on the existing ITD Stanley site. It is the responsibility of the contractor to develop the site and provide MHU foundation per structural with mechanical, plumbing and electrical for the MHU per the full set of drawings. The MHU is to be site delivered once foundation is complete. Hook-up all utilities, crawl space skirting installed, and canopy roofs with stairs & landing installed as part of the project completion.

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

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

A pre-bid conference will be held at **11:00 a.m.** on **April 18, 2024**, at the Stanley Maintenance Yard located at 4821 ID-21, Stanley, Idaho 83278. Bidders are encouraged to attend.

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

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

INSTRUCTIONS TO BIDDERS

GENERAL PROVISIONS

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

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

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

CONTRACT TIME: The proposed scope of work is estimated to take no more than 120 consecutive calendar days. The contract time shall be 120 consecutive days unless modified by addendum. The owner reserves the right to modify contract time during contract negotiations if proper and reasonable evidence for contract modification has been presented to the owner. Proper and reasonable evidence may be material procurement delays, or anticipated weather delays. No other reasonable evidence may be accepted for contract time extension will be accepted, unless in the best interest of the Idaho Transportation Department.

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

BID RECIEPT 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 2:00 p.m. (MT) on Wednesday, April 24, 2024. Late bids will be rejected and considered invalid. It is the responsibility of the bidder to confirm receipt of bid prior to the bid date. Delays due to mail, traffic, unable to find the address, or delivery to the wrong address will not be reasons for acceptance. Contractor will be responsible for determining the exact location of bid receipt. Bids delivered to any other address or ITD office other than the one stated is not acceptable, and the bid will be determined as a non-conforming bid. Bids cannot be emailed. Bids will only be received in physical form by hand delivery, delivery service, or mail service. Bidder to note the bids due date time is Mountain Time Zone.

BID OPENING DATE: Idaho Transportation Department will open acceptable bids on Wednesday, April 24, 2024, at 2:00 p.m. (MT). at the Idaho Transportation Department Headquarters (11331 W Chinden Blvd., Bld. 8, Boise, Idaho 83714,).

ADVERTISEMENT FOR BID: The advertisement for bid will be posted on Tuesday, April 9th and Tuesday, April 16th, in the Times-News.

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

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

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

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

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

PRE-BID CONFERENCE: An on-site pre-bid conference will be provided on Thursday, April 18, 2024, at 11:00 am (MT) for site review, questions, and answers about the project. Attendance is not mandatory, but strongly encouraged for bidders to understand the site and scope of the project. Failure to account for all subjects observed and discussed at the pre-bid meeting will not be a cause for a change order. If a bidder cannot attend the pre-bid conference it is encouraged to visit the site on their own time to get firsthand knowledge of the existing field conditions, topography, and constraints. The site is open to the public. The bid documents are meant to show the project intent and are not meant to be a comprehensive representation of the existing site conditions and application of design intent.

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

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

BID SUBMISSION PROCESS

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

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

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

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

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

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

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
Jacob Jackson/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.

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

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

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

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

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

BID SECURITY

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

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

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

BID WITHDRAWAL

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

BID MODIFICATION

PRIOR TO BID CLOSING: If a bid has been submitted, it may be modified by the submission of a written document contained in a separate sealed envelope marked "Bid Modification from [Name of Bidder] for ITD Project No: FM42414, ITD D4 Stanley HUD Manufactured Home & Site Design." **THE DOCUMENT MODIFYING THE BID MUST BE SIGNED IN INK BY AN AUTHORIZED REPRESENTATIVE OF THE SUBMITTING BIDDER. THE IDAHO TRANSPORTATION DEPARTMENT RESERVES THE RIGHT TO REQUIRE PRESENTATION OF EVIDENCE SATISFACTORY TO IT TO ESTABLISH THE AUTHORITY TO ACT ON BEHALF OF THE SUBMITTING BIDDER. NO OTHER FORM OF MODIFICATION (INCLUDING TELEPHONE, FACSIMILE OR ELECTRONIC MAIL) WILL BE ACCEPTED. AFTER BID CLOSING, NO BID MAY BE MODIFIED EXCEPT IN STRICT ACCORDANCE WITH THESE INSTRUCTIONS OR APPLICABLE LAW.**

RELIEF FROM BIDS

CONDITIONS FOR RELIEF: Relief from bids is subject to Sections 54-1904B through 54-1904E, Idaho Code. In the event a bidder discovers a mistake in its bid following the bid opening and wishes to withdraw its bid, the

bidder shall establish to the satisfaction of the Owner, pursuant to Section 54-1904C, Idaho Code, that a clerical or mathematical mistake was made; the bidder gave the public entity (Owner) written notice within five (5) calendar days after the opening of the bid of the mistake, specifying in the notice in detail how the mistake occurred; and the mistake was material.

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

BIDDER'S REPRESENTATIONS

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

1. The person signing the bid is authorized to bind the bidder;
2. It has all required licenses, permits or other authorizations necessary to submit its bid;
3. It has taken steps necessary to ascertain the nature and location of the Work and has investigated and satisfied itself as to the general and local conditions which can affect the Work or its cost, including but not limited to: (i) conditions bearing upon transportation, disposal, handling and storage of materials; (ii) the availability of labor, water, natural gas, electric power and roads; (iii) uncertainties of weather, river stages or similar physical conditions at the site; (iv) the conformation and conditions of the ground; and (v) the character of equipment and facilities needed preliminary to and during the Work;
4. It has satisfied itself as to character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including exploratory work done by the Owner as well as from the drawings and specifications provided as part of the bid package, and that any failure of the bidder to take such actions will not relieve the bidder from responsibility for estimating properly the difficulty and cost of successfully performing the Work;
5. It has received, read and reviewed the Contract, has submitted any questions in writing regarding the same and has received an answer to such questions;
6. Its bid is based upon the requirements of the Contract without exception;
7. It is in compliance with Title 72, Chapter 17, Idaho Code, regarding a drug-free workplace and has included the required affidavit regarding the same;
8. Its bid is in compliance with employment of persons authorized to work in the United States;
9. It will retain bid security and hold and honor all base bid prices for forty-five (45) calendar days from the date of bid opening, and cannot be withdrawn after the bid opening;
10. Its bid prices shown for each item on the bid proposal form include all labor, material, equipment, overhead and compensation to complete all of the Work for that item; and
11. It has included in its bid amount Idaho sales and/or use taxes on all materials and equipment and all other taxes imposed by law.

BID AWARD

AWARD METHOD: Public works construction contracts for the State of Idaho are awarded to the "lowest responsible and responsive bidder." The low bidder, for purposes of award, shall be the responsible and responsive bidder offering the low aggregate amount for the base bid item, plus any additive or deductive bid alternates selected by the Owner, and within funds available as determined by the Owner. Award is also subject to the requirements of Idaho Code, including without limitation: Title 67, Chapter 57; Title 67, Chapter 23; Title 54, Chapter 19; and Title 44, Chapter 10. It is the bidder's responsibility to conform to **ALL** applicable federal, state

and local statutes or other applicable legal requirements. The information provided herein is intended to assist bidders in meeting applicable requirements but is not exhaustive and the Owner will not be responsible for any failure by any bidder to meet applicable requirements.

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

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

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

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

POST-AWARD SUBMITTALS: Upon receipt of a Notice of Intent to Award, the apparent low responsive and responsible bidder shall provide documentation required in such Notice. Such Notice of Intent to Award shall generally require the bidder to return to the Owner, within ten (10) days of receipt, a signed Contract, all required bonds, proof of insurance and documentation required by the Idaho State Tax Commission (report and affidavit).

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

BUILDING PERMIT

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

PROPERTY INSURANCE

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

MATERIAL COST INCREASE & MATERIAL SCHEDULE DELAYS

MATERIAL DELAYS: Delays as a result of unavoidable production or delivery times shall be cause for contract time extensions. Contract price will not be adjusted because of delayed material delivery. To extend the contract

time, contractor shall submit documentation from the manufacture as proof of material lead times. Such documentation shall include but not be limited to, order receipt & confirmation with date, confirmation of shipment date, receipt of material receival.

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

END OF INSTRUCTIONS

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 FM42414, ITD D4 Stanley HUD Manufactured Home & Site Design having examined the bidding and Contract Documents and the site of the proposed Work, and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials and supplies and to provide the service and insurance in accordance with the Contract Documents, within the time set forth therein, and at the prices stated below. These prices are to cover all expenses incurred in performing the Work required under the Contract Documents.

Bidder hereby agrees to commence Work under this Contract on a date to be specified in the written "Notice to Proceed" of the Owner and to substantially complete the Project within one hundred and twenty (120) consecutive calendar days thereafter, as stipulated in the specifications. Bidder further agrees to pay as liquidated damages, the sum of $500.00 for each consecutive calendar day after the established substantial completion date or adjusted date as established by change order.

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

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

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

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

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

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

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

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

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

Electrical (PWCL Category 16000)

(Name) _____

(Address) _____

Idaho Public Works Contractors License No. _____

Idaho Electrical Contractors License No. _____

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

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

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

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

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

Respectfully submitted by:

_____
(Contractor's Name- Typed)

SEAL
(Seal - if bid is by a corporation)

_____
(Street or PO Address)

_____
(City, State and zip code)

_____
(Authorized Signature)

_____
(Title)

_____
(Telephone Number)

_____
(FAX Number)

_____
(Email Address)

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

Execute and Submit with Bid

CONTRACTOR'S AFFIDAVIT
CONCERNING ALCOHOL AND DRUG-FREE WORKPLACE

STATE OF _____

COUNTY OF _____

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

_____
Name of Contractor

_____
Address

_____
City and State

By: _____
(Signature)

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

_____
NOTARY PUBLIC
Residing at: _____
Commission expires: _____

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

Execute and Submit with Bid

BIDDER'S ACKNOWLEDGMENT STATEMENT

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

Project number: FM42414, ITD D4 Stanley HUD Manufactured Home & Site Design

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

- Contractor agrees to comply with conditions pertaining to Sections 44-1001 and 44-1002, Idaho Code, requiring the employment of ninety-five percent (95%) bona fide Idaho residents and providing for a preference in the employment of bona fide Idaho residents and regarding the employment of persons not authorized to work in the United States.

- Contractor will substantially complete the Work within the time stated in the Contract Documents, or as modified by Change Order(s).

- If the Contractor fails to substantially complete the Project within the time stated in the Contract Documents, or as modified by Change Order, the Contractor agrees that the Owner may deduct from the Contract amount liquidated damages in the amount per calendar day, indicated in the Contract Documents, times the number of calendar days until the Project is Substantially Complete, as defined in the Contract Documents and as determined by the Design Professional.

- The Contractor agrees that the amount allowed for overhead and profit on any Change Order is limited to the amounts indicated in subparagraph 16.3.11 of the Fixed Price Construction Contract between Owner and Contractor.

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

    2. The Contractor will determine the amount of overhead and profit to be apportioned between the Contractor and its subcontractor of allowable amounts of overhead, profit, bonds and insurance.

- The Contractor agrees that Change Orders are governed by the Fixed Price Construction Contract between Owner and Contractor General Conditions of the Contract for Construction including as follows:

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

    2. Any Change Order fully executed by the Owner, Contractor and Design Professional, including but not limited to, a Change Order arising by reason of the parties' mutual agreement or by mediation, shall constitute a final and full settlement of all matters relating to or affected by the change in the Work, including but not limited to, all direct and consequential costs associated with such change and any and all adjustments to the Contract Price and Contract Time. In the event a Change Order increases the Contract Price, the Contractor shall include the Work covered by such Change Order in the Application for Payment as if such Work was originally part of the Project and Contract Documents.

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

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

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

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

Authorized Signature: _____

Title: _____

Date: _____

END OF BIDDER'S ACKNOWLEDGMENT STATEMENT

IDAHO TRANSPORTATION DEPARTMENT
FIXED PRICE CONSTRUCTION CONTRACT
BETWEEN OWNER AND CONTRACTOR

ITD PROJECT NO. FM42414
ITD D4 Stanley HUD Manufactured Home & Site Design
Idaho Transportation Department
11331 W Chinden Blvd
Boise, Idaho 83714

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FIXED PRICE CONSTRUCTION CONTRACT
BETWEEN OWNER AND CONTRACTOR

THIS FIXED PRICE CONSTRUCTION CONTRACT BETWEEN OWNER AND CONTRACTOR (the “Contract”) is by and between the State of Idaho, Idaho Transportation Department (“ITD” or the "Owner") and (insert name of contractor) (the "Contractor") and is for the construction of the project (the “Project”) identified as ITD Project No. FM42414, as more fully described in Exhibit A, and incorporated herein by reference. This Contract shall be effective on day of month , 2021, when executed by both parties.

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

ARTICLE 1
CONTRACT DOCUMENTS

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

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

ARTICLE 2
REPRESENTATIONS AND WARRANTIES OF THE CONTRACTOR

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

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

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

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

the contractor believes that the documents are complete and the Project is buildable as described except as reported.

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

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

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

ARTICLE 3
INTENT AND INTERPRETATION

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

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

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

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

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

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

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

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

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

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

ARTICLE 4
OWNERSHIP OF DOCUMENTS

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

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

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

ARTICLE 5
CONTRACTOR'S PERFORMANCE

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

5.1 Construction of the Project.

5.2 The furnishing of any required surety bonds and insurance.

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

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

ARTICLE 6
TIME FOR CONTRACTOR'S PERFORMANCE

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

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

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

or accepted as substantially complete, and such partial use or occupancy shall not be evidence of Substantial Completion. The Project shall not be deemed accepted until it is finally complete.

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

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

ARTICLE 7
FIXED PRICE AND CONTRACT PAYMENTS

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

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

7.3 The Owner shall pay the Fixed Price Contract Amount to the Contractor in accordance with the procedures set forth in this Article. The Contractor shall submit a Contractor's Request for Payment, on or before the day of each month indicated in Exhibit A or otherwise agreed to, after commencement of performance, but no more frequently than once monthly. Said payment request shall be on made in the Owner's web-based construction management software, and shall include whatever supporting information as may be required by the Design Professional, the Owner or both. Therein, the Contractor may request payment for one hundred percent (100%) of the Work satisfactorily completed to the date of the Contractor's Request for Payment, less five percent (5%) retainage, based on the Fixed Price Contract Amount allocated on the Schedule of Values. The Contractor's Request for Payment may include only: properly provided labor, materials or equipment properly incorporated into the Project, and time and materials or equipment necessary for the Project or that will be incorporated into the Project and are properly stored at the Project site (or elsewhere if off-site storage is approved in writing by the Owner). The Contractor's Request for Payment must exclude the total amount of previous payments received from the Owner. Any payment on account of stored materials or equipment will be subject to the Contractor providing written proof that the Owner has title to such materials or equipment and that they are fully insured against loss or damage. Each such Contractor's Request for Payment shall be signed by the Contractor and its submission shall constitute the Contractor's affirmative representation that the quantity of Work has reached the level for which payment is requested; that the Work has been properly installed or performed in strict compliance with the Contract; that all Work for which the Owner has previously paid is free and clear of any lien, claim or other encumbrance of any person whatsoever; and that the Contractor knows of no reason why payment should not be made as requested. As a condition precedent to payment, the Contractor shall, if required by the Owner, furnish to the Owner properly executed waivers or releases, in a form acceptable to the Owner, from all subcontractors, materialmen, suppliers or others having any claims or alleged claims, wherein said subcontractors, materialmen, suppliers or others shall acknowledge receipt of all sums due pursuant to all prior Contractor's Requests

for Payment, and waive and relinquish any rights or other claims relating to the Project or Project site. The submission by the Contractor of the Contractor's Request for Payment also constitutes the Contractor's affirmative representation that, upon payment of the Contractor's Request for Payment submitted, title to all Work included in such payment shall be vested in the Owner.

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

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

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

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

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

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

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

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

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

7.6 When payment is received from the Owner, the Contractor shall immediately pay all subcontractors, materialmen, laborer and suppliers the amounts they are due for the Work covered by such payment. The Contractor shall not withhold from a subcontractor or supplier more than the percentage withheld from a payment certificate for the subcontractor's or supplier's portion of the Work. In the event the Owner becomes informed that the Contractor has not paid a subcontractor, materialmen,

laborer or supplier as provided herein, the Owner shall have the right, but not the duty, to issue future checks and payment to the Contractor of amounts otherwise due hereunder naming the Contractor and any such subcontractor, materialmen, laborer or supplier as joint payees. Such joint check procedure, if employed by the Owner, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit the Owner to repeat the procedure in the future.

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

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

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

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

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

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

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

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

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

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

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

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

7.9 If the Owner, without cause, fails to pay the Contractor any amounts due and payable thirty (30) days after those amounts are due pursuant to Paragraph 7.4, the Contractor shall have the right to cease the Work until receipt of proper payment. Contractor must first provide written notice to the Owner of the

Contractor's intent to cease the Work ten (10) days prior to stopping the Work under this Paragraph. If any amounts remain unpaid after fifty-one (51) days after the Design Professional approves the Contractor's Request for Payment under Paragraph 7.4, interest at the rate of four percent (4%) per annum shall accrue on those unpaid amounts.

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

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

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

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

.1 An affidavit that all of the Contractor's obligations to subcontractors, laborers, equipment or material suppliers or other third parties in connection with the Project have been paid or otherwise satisfied;

.2 A release by the Contractor of all Claims it has or might have against the Owner or the Owner's property (DPW's form, Exhibit H);

.3 Contractor's Affidavit of Debts and Claims (AIA Document G706);

.4 Consent of Surety to final payment (AIA Document G707);

.5 Confirmation of all required training, product warranties, operating manuals, instruction manuals and other record documents, drawings and things customarily required of the Contractor; and

.6 A Public Works Contract Tax Release issued by the Idaho Tax Commission (See "Request for Tax Release" form, Exhibit G, to be submitted by Contractor to the Idaho Tax Commission).

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

ARTICLE 8
INFORMATION AND MATERIAL SUPPLIED BY THE OWNER

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

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

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

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

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

ARTICLE 9
STOP WORK ORDER

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

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

ARTICLE 10
DUTIES, OBLIGATIONS AND RESPONSIBILITIES OF THE CONTRACTOR

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

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

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

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

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

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

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

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

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

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

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

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

10.12 Unless otherwise provided in the Construction Documents, on all projects where the Fixed Price Contract Amount is over $1,000,000, the Contractor shall schedule and perform the Work in accordance with a Critical Path Method (“CPM”) to indicate the rate of progress and practical order of the Project. The

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

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

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

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

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

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

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

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

ARTICLE 11
INDEMNITY

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

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

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

ARTICLE 12
THE DESIGN PROFESSIONAL

The Design Professional for this Project is identified in Exhibit B, incorporated herein by reference, along with any authorized representatives and any limitations of responsibility. For the purpose of this Contract, the "Design Professional" means the properly licensed architect, properly registered professional engineer or other professional licensed in the State of Idaho who prepared the Drawings and Specifications for this Project. If the employment of the Design Professional is terminated, the Owner may retain a replacement professional and the role of the replacement professional shall be the same as

the role of the Design Professional. Unless otherwise directed by the Owner in writing, the Design Professional will perform those duties and discharge those responsibilities allocated to the Design Professional in this Contract. The duties, obligations and responsibilities of the Design Professional shall be for contract administration and include the following:

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 13
CLAIMS

13.1 For purposes of this Contract, a “Claim” means a demand by the Contractor to the Owner, or by the Owner to the Contractor, for a change in the Fixed Price Contract Amount, an extension of the

Contract Time, an adjustment to or interpretation of the Contract terms, or other relief with respect to the terms of the Contract, which demand the Contractor or Owner asserts is required or allowed under the Contract Documents and which the Contractor and the Owner have previously discussed and failed to agree upon.

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

.1 The Claim must be in writing;

.2 The Claim by the Contractor must be signed by an authorized representative of the Contractor, and the Claim by the Owner must be signed by an authorized representative of the Owner;

.3 The Claim by the Contractor must be provided to the Owner and to the Design Professional and the Claim by the Owner must be provided to the Contractor and to the Design Professional;

.4 The Claim must be made no later than ten (10) days after the event or first appearance of the circumstance giving rise to the Claim;

.5 The Claim must describe in detail all known facts and circumstances that the Contractor or Owner asserts support the Claim;

.6 The Claim must refer to the provision(s) of the Contract Documents that the Contractor or Owner asserts support the Claim;

.7 The Contractor or Owner must provide all documentation or other information to substantiate the Claim; and

.8 The Contractor or Owner must continue its performance under this Contract pending the resolution of any Claim; provided, however, that the Contractor shall not perform any additional or changed work not otherwise authorized in accordance with the Contract Documents.

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

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

.1 The condition must have been previously concealed and unknown or of a type not ordinarily encountered in the general geographic location of the Project and must not have been reasonably susceptible to discovery; and

.2 The Contractor shall notify the Design Professional and the Owner of the condition and shall not disturb the condition until the Design Professional and Owner have observed it or have waived in writing the right to observe it.

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

.1 Any increase in the Fixed Price Contract Amount shall be strictly limited to the direct costs incurred by the Contractor and shall not include any other costs, indirect or other, including any costs for or related to lost productivity, profit, home office overhead and any other overhead,

legal fees, claim preparation, any matter previously resolved by a change order, equipment costs, costs related to the services of a project manager unless the project manager was required full time by the Owner or the Contract Documents, any costs associated with the failure to complete the Work early or in advance of the date required by the Contract Documents, it being specifically agreed to by the parties that there is no intention to have the Eichleay or other similar formula applicable to this Contract nor shall this Contract be deemed to be subject to any such formula; and

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

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

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

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

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

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

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

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

ARTICLE 14
RESOLUTION OF CLAIMS

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

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

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

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

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

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

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

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

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

ARTICLE 15
SUBCONTRACTORS

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

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

ARTICLE 16
CHANGES IN THE WORK

16.1 General

.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article and elsewhere in the Contract Documents; and

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

16.2 Change Orders

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

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

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

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

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

16.3 Construction Change Directive (CCD)

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

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

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

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

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

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

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

.4 As provided in subparagraph 16.3.7;

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

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

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

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

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

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

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

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

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

.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in the Contractor's Request for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs;

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

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

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

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

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

ARTICLE 17
DISCOVERING AND CORRECTING DEFECTIVE OR INCOMPLETE WORK

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

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

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

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

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

ARTICLE 18
TERMINATION BY THE CONTRACTOR

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

.1 Issuance of an order by a court or by another public authority having jurisdiction and authority which requires all Work to be stopped; or

.2 An act of government, such as a declaration of national emergency, which requires all Work to be stopped.

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

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

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

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

.1 Demobilization and remobilization, including such costs paid to subcontractors;

.2 Preserving and protecting Work in place;

.3 Storage of materials or equipment purchased for the Project, including insurance thereon; and

.4 Performing in a later, or during a longer, time frame than that provided by this Contract.

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

.1 That performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 That an equitable adjustment is made or denied under another provision of the Contract.

ARTICLE 20
TERMINATION BY THE OWNER

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 21
CONTRACTOR'S LIABILITY INSURANCE

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

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

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

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

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

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

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

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

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

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

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

.1 Workers' Compensation and Employer’s Liability

(a) State Workers Compensation: Statutory

(b) Employer's Liability: $100,000 per Accident

$500,000 Disease, Policy Limit

$100,000 Disease, Each Employee

.2 Comprehensive Commercial General Liability and Umbrella Liability Insurance. Contractor shall maintain Commercial General Liability (“CGL”) and, if necessary, commercial umbrella insurance with a limit of not less than $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.

ARTICLE 22
OWNER'S LIABILITY INSURANCE

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

ARTICLE 23
PROPERTY INSURANCE

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 24
PERFORMANCE AND PAYMENT BONDS

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

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

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

ARTICLE 25
PROJECT RECORDS

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

ARTICLE 26
MISCELLANEOUS PROVISIONS

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

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 27
EQUAL OPPORTUNITY

The Contractor shall maintain policies of employment as follows:

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

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

ARTICLE 28
SUCCESSORS AND ASSIGNS

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

ARTICLE 29
SEVERABILITY

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

ARTICLE 30
MEDIATION

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 31
WAIVER OF CONSEQUENTIAL DAMAGES

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

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

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

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

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

OWNER

State of Idaho
Idaho Transportation Department

By: _____

_____
Date Executed

Jacob Jackson,
Facilities Management Contracting Officer

CONTRACTOR

_____
(Contractor's Name- Typed)

SEAL

By: _____

_____
Date Executed

Signature

_____
Printed Name

_____
Title

EXHIBIT A

OWNER'S PROJECT IDENTIFICATION INFORMATION:

ITD D4 Stanley HUD Manufactured Home & Site Design
ITD Project No. FM42414
Stanley, ID

General Project Description: The scope of this project is for a new manufactured home unit (MHU) on the existing ITD Stanley site. It is the responsibility of the contractor to develop the site and provide MHU foundation per structural with mechanical, plumbing and electrical for the MHU per the full set of drawings. The MHU is to be site delivered once foundation is complete. Hook-up all utilities, crawl space skirting installed, and canopy roofs with stairs & landing installed as part of the project completion.

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

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

FIXED PRICE CONTRACT AMOUNT AND ACCEPTED ALTERNATES:

Base Bid Amount:			$.00
Alternate No. __	(_____)	add	$.00
Alternate No. __	(_____)	add	$.00

Total Fixed Price Contract Amount
(_____) Dollars $.00

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

TIME FOR PERFORMANCE AND LIQUIDATED DAMAGES:

A. The Contractor shall commence construction of its scope of the Work in accordance with the Notice to Proceed issued by the Owner, and which will become Exhibit F to this Contract.

B. The Contractor shall accomplish Substantial Completion as defined in Article 6 of the Contract within one hundred and twenty (120) consecutive calendar days from the date authorized to proceed in the Notice to Proceed.

C. The amount of liquidated damages per day for each and every day of unexcused delay as outlined in Article 6 on the Contract is: Five Hundred Dollars ($500.00)

DRAWINGS AND SPECIFICATIONS

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

EXHIBIT B

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

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

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

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

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

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

Contractor's Project Manager:
_____ (name)
_____ (telephone and FAX)
_____ (E-mail)
May sign for Contractor: Yes [ ] No [ ]
Change Orders: up to: $____.00
Construction Change Authorizations: up to: $_____.00
Contractor's Request for Payment

Contractor's Superintendent:
_____ (name)
_____ (telephone and FAX)
_____ (E-mail)
May sign for Contractor: Yes [ ] No [ ]
Construction Change Authorizations: up to $_____.00

DESIGN PROFESSIONAL:

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

Professional's Project Manager:

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

Professional's Field Representative:

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

May sign for Design Professional:

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

EXHIBIT C

LIST OF DRAWINGS:

General
G100 Cover Sheet

Site Plans
SP100 Architectural Site Plan

Civil
C0.1 Existing Site Layout
C1.0 Overall Site Layout, Legend, and Abbreviations
C2.0 Site Layout
C2.1 Sewer Layout
C2.2 Sewer and Water Details
C3.0 Grading Plan

Architectural
A100 Overall Floor Plans
A101 Section and MUH Information

Structural
S1.0 Foundation Plan
S1.1 Structural Details

Mechanical and Plumbing
M0.0 Basic Mechanical Requirements Specification Section 15010
M0.1 Basic Mechanical Requirements Specification Section 15010
M0.2 Plumbing Specifications Section 15400
M1.0 General Notes and Legend
M2.0 Plumbing New Site Plan
M5.0 Plumbing Details

Electrical
E0.0 Electrical Cover
E.01 Electrical Cover
E1.0 Electrical Site Plan

LIST OF SPECIFICATIONS:

DIVISION 1 - GENERAL REQUIREMENTS
01 10 00 Summary
01 23 00 Alternates
01 25 00 Substitution Procedures
01 26 00 Contract Modification Procedures
01 29 00 Payment Procedures
01 31 00 Project Management and Coordination
01 33 00 Submittal Procedures
01 40 00 Quality Requirements
01 50 00 Temporary Facilities and Controls
01 60 00 Product Requirements
01 73 00 Execution
01 77 00 Closeout Procedures
01 78 23 Operation and Maintenance Data
01 78 39 Project Record Documents

01 79 00 Demonstration and Training
Copyright Release Agreement
Request for Interpretation
Substitution Request

DIVISION 3 – CONCRETE
03 10 00 Concrete Forming and Accessories
03 20 00 Concrete Reinforcing
03 30 00 Cast-in-Place Concrete
03 35 00 Concrete Finishing
03 39 00 Concrete Curing
03 60 00 Grouting

DIVISION 5 – METALS
05 50 00 Metal Fabrications

DIVISION 6 – WOOD PLASTICS AND COMPOSITES
06 10 00 Rough Carpentry
06 10 53 Miscellaneous Rough Carpentry
06 20 13 Exterior Carpentry

SITE AND INFRASTRUCTURE SPECIFICATIONS

DIVISION 31 – EARTHWORK
31 10 00 Clearing and Grubbing
31 20 00 Earthwork
31 20 15 Trenching and Backfill

DIVISION 32 – EXTERIOR IMPROVEMENTS
32 13 13 Site Concrete Paving

EXHIBIT D

CONTRACTOR'S AFFIDAVIT CONCERNING TAXES

STATE OF _____)

COUNTY OF _____)

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

_____
Name of Contractor

_____
Address

_____
City and State *SEAL*

By:

_____
(Signature)

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

_____
NOTARY PUBLIC
Residing at: _____
Commission expires: _____

EXHIBIT E

NAMED SUBCONTRACTORS:

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

Electrical (PWCL Category 1600)

(Name) _____
(Address) _____

Idaho Public Works Contractors License No. _____

Idaho Electrical Contractors License No. _____

EXHIBIT F

NOTICE TO PROCEED

TO CONTRACTOR: DPW NUMBER:

CONTRACT DATE
We :

CONTRACT AMOUNT: $

DATE OF ISSUANCE:

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

OWNER: State of Idaho

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

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

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

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

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

Sincerely,

PAT DONALDSON
ADMINISTRATOR

PD:pb

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

EXHIBIT G

Idaho State Tax Commission
REQUEST FOR TAX RELEASE

Date:_____

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

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

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

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

NOTE: *We will email all copies unless otherwise requested*

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

Description of project

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

Did any government entities supply materials which were installed by this contractor or its subs?: Yes ☐ No ☐

If YES, list these materials and their dollar values. (Attach additional information if needed)

List Materials	List Dollar Values of Materials
	$
	$
	$

Send to: Contract Desk/Sales Tax Audit
Idaho State Tax Commission PO Box 36

Boise ID 83722-0410
Phone: (208) 334-7618 • Fax: (208) 332-6619 • Email: **contractdesk@tax.idaho.gov**

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

EXHIBIT H

RELEASE OF CLAIMS

(TO BE COMPLETED FOR FINAL PAYMENT)

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

Dated _____ Contractor _____

EXHIBIT J

Conditions Precedent to Final Payment

Date: _____

ITD Project No. _____
Project Title:_____
Location:_____

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

Copy to:
Design Professional
_____
_____
_____

Contractor's Responsibilities:

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

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

_____

Contractor's Signature Date

Design Professional's Approval for Payment:

- ❒ All Documents Required per Paragraph 7.13 of the Fixed Price Contract
- ❒ All Warranties, Guarantees, etc. have been received, approved and have been provided.
- ❒ Contractor's As-Built Drawings, have been received, reviewed, approved.
- ❒ Final punch list with AE's verification that all items have been completed, 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 K

STATE OF IDAHO

Idaho Transportation Department

Training Confirmation Sign-In Sheet

DPW Project: _____ Agency: _____
Project Name: _____ Project Location: _____
Field Representative: _____ Date & Time:_____

Name	Company	E-mail	Telephone	Signature

EXHIBIT L

PROJECT FINALIZATION AND START-UP

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

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

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

Agency's Representative	Contractor
Signature	Signature
Date	Date

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Technical Specifications

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01 10 00

SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
1. Work covered by Contract Documents.
2. Work by Owner.
3. Work under separate contracts.
4. Owner-furnished products.
5. Contractor-furnished, Owner-installed products.
6. Access to site.
7. Coordination with occupants.
8. Work restrictions.
9. Permits.
10. Waste Disposal.
11. Testing and Inspection.
12. Specification and drawing conventions.

B. Related Requirements:
1. Section 01 50 00 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following: The scope of this project is for a new HUD manufactured home unit (MHU) on the existing ITD Stanley site. It is the responsibility of the contractor to develop the site and provide MHU foundation per structural with mechanical, plumbing and electrical for the MHU per the full set of drawings. The MHU is to be site delivered once foundation is complete. Hook-up all utilities, crawl space skirting installed, and canopy roofs with stairs & landing installed as part of the project completion.

1.4 WORK BY OWNER

A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

B. Items noted NIC (Not in Contract), will be furnished and installed by the Owner/Agency.

1.5 WORK UNDER SEPARATE CONTRACTS

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

1.6 ACCESS TO SITE

A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project, and by use of facility by building tenants in existing tenant improvement Projects.

B. Use of Site: Limit use of Project site to the work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
   1. Limits: Confine construction operations to the areas of work indicated on and in the drawings and specifications.
   2. Driveways, Walkways and Entrances: Keep driveways loading areas, etc. and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
      a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
      b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
      c. Contractor parking shall be limited to those areas indicated on the Contract Document and as designed by the Owner.
      d. Maintain clear access to project at all times for firefighting equipment. Maintain exit ways from existing building required by authorities having jurisdiction.
      e. Signs: Provide signs adequate to direct visitors.
         1) Do not install, or allow to be installed, signs other than specified sign(s) and signs identifying the principal entities involved in the project.

C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Any damage to the building, due to negligence on behalf of the contractor to not maintain a weather-tight condition, shall be the responsibility of contractors and they shall bear the burden for correction and/or repairs for any damage. Repair damage caused by construction operations.

D. Security: The contractor shall maintain security of the building and any staging areas throughout the project.

1.7 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
   1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or

used facilities without written permission from Owner and approval of authorities having jurisdiction.
2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.
3. The Owner will take special care not to damage materials or work completed by the contractor prior to final acceptance. If the contractor occurs any damages, prior to final acceptance, they need to notify the Owner and Architect immediately for verification of damages. If the contractor fails to notify the Owner and Architect within 24 hours of the incident, the contractor shall be responsible for the performance and shall bear the cost of correction.

1.8 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, unless otherwise indicated.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
1. Notify Owner not less than 3 days in advance of proposed utility interruptions.
2. Obtain Owner's written permission before proceeding with utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
1. Notify Owner not less than 2 days in advance of proposed disruptive operations.

E. Hazardous Materials: Notify the Design Professional and Owner immediately upon discovery of existing hazardous materials.

F. Nonsmoking Building: Smoking is not permitted within the building or on Idaho Transportation Department property.

G. Controlled Substances: Use of tobacco products and other controlled substances is not permitted per Section 72-1717, Idaho Code.

H. Contractor Parking: Coordinate with Idaho Transportation Department for Contractor parking.

I. On Owner/Tenant occupied projects, maintain cleanliness in areas adjacent to and surrounding the construction area to the satisfaction of the Owner at all times.

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

1.9 PERMITS

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

1.10 WASTE DISPOSAL

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

1.11 TESTING AND INSPECTION

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

1.12 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
   1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
   2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
   1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
   2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
   3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:
   1. Section 01 60 00 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

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

1.3 ACTION SUBMITTALS

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

i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
   a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
   b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

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

1.5 PROCEDURES

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

1.6 SUBSTITUTIONS

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

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

B. Substitutions for Convenience: Not allowed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 MINOR CHANGES IN THE WORK

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

1.4 PROPOSAL REQUESTS

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

B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
   1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

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

1.5 CHANGE ORDER PROCEDURES

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

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Owner’s Representative may issue a Construction Change Directive. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
   1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

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

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 SCHEDULE OF VALUES

A. Submit printed schedule on AIA G703 - Continuation Sheet for G702 Contractor's standard form or electronic media printout will be considered for this use.

B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement

C. Format: Use Table of Contents of this Project Manual
   1. Identify each line item with number and title of major Specification Section
   2. Identify line item for site mobilization, bonds and insurance, and project closeout.
   3. Include the following Project identification of the Schedule of Values:
      a. Project name and location
      b. Name of General Contractor
      c. Name of Architect
      d. Owner’s project number
      e. Date of submittal.
   4. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
      a. Related Specification Section or Division
      b. Description of the Work
      c. Change Orders (numbers) that affect value.
      d. Dollar value
   5. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluations of Applications of Payment and progress reports.
   6. Coordinate with the Project Manual table of contents.
   7. Provide several line items for principal subcontract amounts, where appropriate
   8. Round amounts to nearest whole dollar; total shall equal the Contract.
   9. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not installed.
      a. Differentiate between items stored on-site and items stored off-site.
      b. Include evidence of insurance or bonded warehousing if required.
   10. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
   11. Each item in the Schedule of Values and Applications for Payment shall be complete.

a. Include total cost and proportionate share of general overhead and profit for each item.
b. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

D. Include within each line item, direct proportional amount of Contractor's overhead and profit.

E. Revise schedule to list approved Change Orders with each Application for Payment

1.2 APPLICATION FOR PAYMENT

A. Submit one copies of each Application for Payment on AIA G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702

B. Content and Format: Use Schedule of Values for listing items in Application for Payment

C. Complete every entry on form.
1. Execute by a person authorized to sign legal documents on behalf of Contractor.
2. Architect will return incomplete applications without action.
3. Entries shall match data on the Schedule of Values.
4. Include amounts of Change Orders approved before last day of construction period covered by application.

D. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

E. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor
1. The period of construction work covered by each Application of Payment is the period indicated in the Agreement.

F. Administrative actions and submittals that must precede or coincide with submittal of first Application of Payment include the following:
1. List of subcontractors (if applicable)
2. Schedule of Values
3. Submittals Schedule (preliminary if not final).
4. List of Contractor's staff assignments
5. Copies of permits (if applicable)
6. Copies of authorizations and licenses form authorities having jurisdiction for performance of the Work.
7. Initial progress report

G. Submit with transmittal letter as specified for Submittals in Section 01 33 00 - Submittal Procedures
1. One signed original copy of Application for Payment to the Architect

H. Submit updated construction schedule with each Application for Payment

I. After issuing the Certificate of Substantial Completion, submit an Application of Payment showing 95 percent completion of portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
   1. General coordination procedures.
   2. Coordination drawings.
   3. RFIs.
   4. Digital project management procedures.
   5. Project meetings.

B. Related Requirements:
   1. Section 01 73 00 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.3 DEFINITIONS

A. BIM: Building Information Modeling.

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

1.4 INFORMATIONAL SUBMITTALS

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

   1. Post copies of list in project meeting room, in temporary field office. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

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

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

1.6 COORDINATION DRAWINGS

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

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

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

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

1.7 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI.
   1. Design Professional will approve RFIs with any comments.
   2. Design Professional shall notify Owner of the Design Professional's Representative who will receive and respond to RFIs.
   3. Contractor shall submit RFIs in a prompt manner so as to avoid delays in the work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
   1. RFI subject.
   2. Specification Section number and title and related paragraphs, as appropriate.
   3. Drawing number and detail references, as appropriate.
   4. Field dimensions and conditions, as appropriate.
   5. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
   6. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

C. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven (7) working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
   1. The following Contractor-generated RFIs will be returned without action:
      a. Requests for approval of submittals.
      b. Requests for approval of substitutions.
      c. Requests for approval of Contractor's means and methods.
      d. Requests for coordination information already indicated in the Contract Documents.
      e. Requests for adjustments in the Contract Time or the Contract Sum.
      f. Requests for interpretation of Architect's actions on submittals.
      g. Incomplete RFIs or inaccurately prepared RFIs.

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

D. On receipt of Architect's action: Review response and notify Architect within seven (7) days if Contractor disagrees with response.

1.8 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Architect's Data Files Not Available: Architect will provide Architect's CAD drawing digital data files for Contractor's use during construction.

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

1) CAD files may not necessarily represent the latest Contract Documents, existing conditions, and as-built conditions. Receiver is responsible for determining and complying with these conditions and for incorporating addenda and modifications.
2) Receiver shall not hold Architect/Engineer responsible for data or file clean-up required to make files usable, nor for error or malfunction in translation, interpretation, or use of this electronic information.
3) Receiver shall understand that even though Architect/Engineer has computer virus scanning software to detect presence of computer viruses, there is no guarantee that computer viruses are not present in files or in electronic media.
4) Receiver shall not hold Architect/Engineer responsible for such viruses or their consequences, and shall hold Architect/Engineer harmless against costs, losses, or damage caused by presence of computer virus in files or media.

C. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.9 PROJECT MEETINGS

A. General: The Design Professional will schedule and conduct meetings and conferences at Project site unless otherwise indicated.

B. Preconstruction Conference: The Owner will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect.
1. Minutes: The Design Professional will be responsible for the meeting minutes and will record and distribute to all parties.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Owner of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
a. Contract Documents.
b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Sustainable design requirements.

i. Review of mockups.
j. Possible conflicts.
k. Compatibility requirements.
l. Time schedules.
m. Weather limitations.
n. Manufacturer's written instructions.
o. Warranty requirements.
p. Compatibility of materials.
q. Acceptability of substrates.
r. Temporary facilities and controls.
s. Space and access limitations.
t. Regulations of authorities having jurisdiction.
u. Testing and inspecting requirements.
v. Installation procedures.
w. Coordination with other work.
x. Required performance results.
y. Protection of adjacent work.
z. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Progress Meetings: The Design Professional will conduct progress meetings at monthly intervals.
1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner, Agency, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
1) Review schedule for next period.
b. Review present and future needs of each entity present, including the following:
1) Interface requirements.
2) Sequence of operations.
3) Resolution of BIM component conflicts.
4) Status of submittals.
5) Status of sustainable design documentation.
6) Deliveries.

7) Off-site fabrication.
8) Access.
9) Site use.
10) Temporary facilities and controls.
11) Progress cleaning.
12) Quality and work standards.
13) Status of correction of deficient items.
14) Field observations.
15) Status of RFIs.
16) Status of Proposal Requests.
17) Pending changes.
18) Status of Change Orders.
19) As-Built Updates.
20) Pending claims and disputes.
21) Documentation of information for payment requests.

4. Minutes: Design Professional responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
   a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

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

1.2 SUBMITTAL SCHEDULE

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

1.3 SUBMITTAL PROCEDURES

A. All submittals will be submitted to the General Contractor for review. General Contractor will then transmit the submittal to the architect for approval.

B. Transmit each submittal with AIA G810 - Transmittal Letter or Contractor similar form.

C. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.

D. Place a permanent label or title block on each submittal for identification.
   1. Indicate name of firm or entity that prepared each submittal on label or title block.
   2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor’s review and approval markings and action taken by Architect.
   3. Include the following information on label for processing and recording action taken:
      a. Project name
      b. Owner’s Project Number
      c. Date
      d. Name and address of Architect
      e. Name and address of Contractor
      f. Name and address of subcontractor, if any
      g. Name and address of supplier
      h. Name and address of Manufacturer
      i. Unique identifier, including revision number
      j. Number and title of appropriate Specification Section
      k. Drawing number and detail references, as appropriate
      l. Other necessary identification

E. Apply Contractor's stamp, signed or initialed, certifying that review, approval,

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

F. Transmit each package with transmittal form individually and appropriately for transmittal and handling.
   1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations.
      a. Include the same label information as the related submittal.
   2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents
   3. Provide locations on transmittal form for the following information.
      a. Project Name
      b. Owner's Project Number
      c. Date
      d. Destination (To :)
      e. Source (From :)
      f. Names of subcontractor, manufacturer, and supplier
      g. Category and type of submittal
      h. Submittal purpose and description
      i. Submittal and transmittal distribution record
      j. Remarks
      k. Signature of transmitter

G. Schedule submittals to expedite Project and deliver to Architect at business address. Coordinate submission of related items
   1. For each submittal for review, allow 10 days excluding delivery time to and from Contractor.

H. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.

I. Allow space on submittals for Contractor and Architect review stamps.

J. When revised for resubmission, identify changes made since previous submission.

K. Distribute copies of reviewed submittals as appropriate
   1. Instruct parties to promptly report inability to comply with requirements.

L. Submittals not requested will not be recognized nor processed.

M. Complete submittals for each item are required.

N. Incomplete Submittals:
   1. Architect/Engineer will not review.
   2. Delays resulting from incomplete submittals are not the responsibility of Architect.

O. Architect will not review submittal:
   1. Received from sources other than General Contractor
   2. Without General Contractor's reviewed stamp
   3. Without a completed transmittal form
   4. Instruct parties to promptly report inability to comply with requirements.

P. Use only final submittals with mark indicating action taken by Architect in connection with construction.

1.2 ELECTRONIC SUBMITTAL PROCEDURES

A. At Contractor's written request, the use of electronic submittals may be approved by the architect.

B. All submittals will be submitted to the General Contractor for review. General Contractor will then transmit the submittal to the architect for approval. Submit each submittal in PDF format.

C. Transmit each submittal with electronic equivalent of AIA Form G810
   1. Allow space on submittals for Contractor's review and approval markings.
   2. Allow space on submittals for Contractor and Architect/Engineer review stamps.
   3. Include the following information for processing and recording action:
      a. Name and address of General Contractor
      b. Project name
      c. Owner's/Architects Project Number
      d. Date
      e. Name and address of Architect
      f. Name and address of Contractor
      g. Name and address of subcontractor, if any
      h. Name and address of supplier
      i. Name and address of Manufacturer
      j. Unique identifier, including revision number
      k. Number and title of appropriate Specification Section
      l. Drawing number and detail references, as appropriate
      m. Other necessary identification
      n. Indicate name of firm or entity that prepared each submittal.

D. Email all electronic submittals to the Architect's Project Manager with a copy to maa@myersanderson.com

E. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.

F. Transmit each package with transmittal form individually and appropriately for transmittal and handling.

G. Complete submittals for each item are required.

H. Incomplete Submittals:
   1. Architect/Engineer will not review.
   2. Delays resulting from incomplete submittals are not the responsibility of Architect.

I. Use only final submittals with mark indicating action taken by Architect in connection with construction.

J. Architect will not review submittal:
   1. Received from sources other than General Contractor
   2. Without General Contractor's reviewed stamp
   3. Without a completed transmittal form
   4. Not in PDF format

K. Schedule submittals to expedite Project and deliver to Architect at business address. Coordinate submission of related items

1. For each submittal for review, allow 10 days.

L. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.

M. When revised for resubmission, identify changes made since previous submission.

N. Distribute copies of reviewed submittals as appropriate
   1. Instruct parties to promptly report inability to comply with requirements.

O. Submittals not requested will not be recognized or processed.

P. Use only final submittals with mark indicating action taken by Architect in connection with construction.

Q. Electronic submittals shall comply with the same requirements contain elsewhere in this section for paper submittals.

1.4 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
   a. Manufacturer's catalog cuts.
   b. Manufacturer's product specifications.
   c. Standard color charts.
   d. Statement of compliance with specified referenced standards.
   e. Testing by recognized testing agency.
   f. Application of testing agency labels and seals.
   g. Notation of coordination requirements.
   h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:
   a. Wiring diagrams that show factory-installed wiring.
   b. Printed performance curves.
   c. Operational range diagrams.
   d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data unless submittal based on Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

C. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
   a. Project name and submittal number.
   b. Generic description of Sample.
   c. Product name and name of manufacturer.
   d. Sample source.
   e. Number and title of applicable Specification Section.
   f. Specification paragraph number and generic name of each item.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit two (2) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
   a. Number of Samples: Submit three (3) sets of Samples. Architect will retain one sample set; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is

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

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

1.5 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.6 ARCHITECT'S REVIEW

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

B. Architect will review each submittal, make marks to indicate corrections or modifications required, and return it.

1. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.

C. Informational submittals and other similar data are for Architect information, do not require Architect responsive action, and will not be reviewed or returned with comment.

D. Submittals made by Contractor that are not required by Contract Documents will not be reviewed and may be discarded.

E. Submittals approval does not authorize change to Contract requirements unless accompanied by Change Order or Architect's Supplemental Instructions.

F. Architect will review submittals twice.
   1. All additional reviews shall be paid for by the Contractor at an established fee.
   2. Owner may withhold monies due to Contractor to cover additional costs beyond the second submittal review.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
   1. Specific quality-assurance and quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
   2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
   3. Requirements for Contractor to provide quality-assurance and -control services required by Design Professional, or Owner, or authorities having jurisdiction are not limited by provisions of this Section.
   4. Specific test and inspection requirements are not specified in this Section.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by the Design Professional.

C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

   1. Laboratory Mockups: Full-size physical assemblies constructed at testing facility to verify performance characteristics.

2. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
3. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Design Professional for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Design Professional for a decision before proceeding.

1.5 ACTION SUBMITTALS

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

1.6 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Qualification Data: For Contractor's quality-control personnel.

C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
   1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Design Professional.
   2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Design Professional.

D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
   1. Specification Section number and title.
   2. Entity responsible for performing tests and inspections.
   3. Description of test and inspection.
   4. Identification of applicable standards.
   5. Identification of test and inspection methods.
   6. Number of tests and inspections required.
   7. Time schedule or time span for tests and inspections.
   8. Requirements for obtaining samples.
   9. Unique characteristics of each quality-control service.

1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 15 days of Notice to Proceed and not less than 2 days prior to preconstruction conference. Submit in format acceptable to Design Professional. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.

B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
   1. Project quality-control manager may also serve as Project superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
   1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
   2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
   3. Owner-performed tests and inspections indicated in the Contract Documents, including tests and inspections indicated to be performed by the Commissioning Authority.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Design Professional has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.8 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
   1. Date of issue.
   2. Project title and number.
   3. Name, address, and telephone number of testing agency.
   4. Dates and locations of samples and tests or inspections.
   5. Names of individuals making tests and inspections.
   6. Description of the Work and test and inspection method.
   7. Identification of product and Specification Section.
   8. Complete test or inspection data.
   9. Test and inspection results and an interpretation of test results.
   10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
   11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
   12. Name and signature of laboratory inspector.
   13. Recommendations on retesting and re-inspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
   1. Name, address, and telephone number of technical representative making report.
   2. Statement on condition of substrates and their acceptability for installation of product.
   3. Statement that products at Project site comply with requirements.
   4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.

5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.9 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
1. Contractor responsibilities include the following:
   a. Provide test specimens representative of proposed products and construction.
   b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
   c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
   d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
   e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
   f. When testing is complete, remove test specimens, assemblies, and mock-ups; do not reuse products on Project unless authorized by the Design Professional.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Design Professional and Commissioning Authority with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.10 QUALITY CONTROL

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

3. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor**,** and the Contract Sum will be adjusted by Change Order.
4. Initial reports (handwritten as a minimum) will be given to the Contractor by the Owner's testing Agency before leaving the site the day of the inspection.
5. Final reports will be issued later to the Contractor, Design Professional, and Owner.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
   a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 33 00 "Submittal Procedures."

D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

E. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

F. Testing Agency Responsibilities: Cooperate with Owner, Design Professional, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Owner, Design Professional, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service to Owner, Design Professional, and Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.

6. Do not perform any duties of Contractor.

G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
   1. Access to the Work.
   2. Incidental labor and facilities necessary to facilitate tests and inspections.
   3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
   4. Facilities for storage and field curing of test samples.
   5. Delivery of samples to testing agencies.
   6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
   7. Security and protection for samples and for testing and inspecting equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
   1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
   1. Distribution: Distribute schedule to Owner, Design Professional, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.11 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner as follows:
   1. Schedule of Special Inspections by Owner: See individual specification sections for specific requirements.

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
   1. Date test or inspection was conducted.
   2. Description of the Work tested or inspected.
   3. Date test or inspection results were transmitted to Architect.
   4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Owner and Design Professional’s reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
   1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 73 00 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:
   1. Section 01 10 00 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.

B. Sewer Service: Agency will pay sewer-service use charges for sewer usage by all entities for construction operations.

C. Water Service: Agency will pay water-service use charges for water used by all entities for construction operations.

D. Electric Power Service: Agency will pay electric-power-service use charges for electricity used by all entities for construction operations.

E. Water and Sewer Service from Existing System: Water from Agency's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

F. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 INFORMATIONAL SUBMITTALS

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

B. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

D. Moisture-and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold.
   1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
   2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
   3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.

E. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
   1. Locations of dust-control partitions at each phase of work.
   2. HVAC system isolation schematic drawing.
   3. Location of proposed air-filtration system discharge.
   4. Waste-handling procedures.
   5. Other dust-control measures.
   6. Noise control measures.

1.4 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

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

C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.5 PROJECT CONDITIONS

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

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
   1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
   2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction and marked for intended location and application.
   3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction.

C. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

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

3.2 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

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

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
   1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures or facilities.
   1. Toilets: Use of Owner's existing toilet facilities may be permitted, if authorized, as long as facilities are cleaned and maintained in a condition acceptable to the Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
   1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.

F. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
   1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
      a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
      b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
   2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
   3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
   1. Install electric power service overhead unless otherwise indicated.

H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
   1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.4 SUPPORT FACILITIES INSTALLATION

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

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

C. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 01 73 00 "Execution."

D. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

E. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

F. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

D. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

E. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
2. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
3. Provide walk-off mats at each entrance through temporary partition.

F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture-Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.

1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
3. Indicate methods to be used to avoid trapping water in finished work.

B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.
4. Remove standing water from decks.
5. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.

2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard and replace stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.

D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

3.7 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 77 00 "Closeout Procedures."

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

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

B. Related Requirements:

1. Section 01 25 00 "Substitution Procedures" for requests for substitutions.

1.2 DEFINITIONS

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

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved by Architect through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.3 ACTION SUBMITTALS

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

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within seven (7) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.

    a. Form of Architect's Approval of Submittal: As specified in Section 01 33 00 "Submittal Procedures."
    b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 01 33 00 "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

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

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

B. Delivery and Handling:

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

C. Storage:

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

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

1.6 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

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

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

B. Product Selection Procedures:

1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

    a. Sole product may be indicated by the phrase: "Subject to compliance with requirements, provide the following: …"

2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

    a. Sole manufacturer/source may be indicated by the phrase: "Subject to compliance with requirements, provide products by the following: …"

3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

    a. Limited list of products may be indicated by the phrase: "Subject to compliance with requirements, provide one of the following: …"

4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, which complies with requirements.

    a. Non-limited list of products is indicated by the phrase: "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following: …"

5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

    a. Limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, provide products by one of the following: …"

6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, which complies with requirements.

    a. Non-limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following: …"

7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.

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

a. For approval of products by unnamed manufacturers, comply with requirements in Section 01 25 00 "Substitution Procedures" for substitutions for convenience.

C. Visual Matching Specification: Where Specifications require "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 01 25 00 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
2. Evidence that proposed product provides specified warranty.
3. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
4. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 73 00

EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.

B. Related Requirements:

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

1.2 QUALITY ASSURANCE

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

d. Sprayed fire-resistive material.
e. Equipment supports.
f. Piping, ductwork, vessels, and equipment.
g. Noise- and vibration-control elements and systems.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
   a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
6. Dates: Indicate on the contractor’s schedule when cutting and patching will be performed.

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

C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

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

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

PART 3 - EXECUTION

3.1 EXAMINATION

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

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 01 31 00 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

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

B. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

C. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of in occupied spaces and in unoccupied spaces, or as required by authorities having jurisdiction.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.

2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Remove and replace damaged, defective, or non-conforming Work.

3.5 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

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

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 01 10 00 "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
   a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
   b. Restore damaged pipe covering to its original condition.
3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 AGENCY-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for Owner’s and Agency construction personnel.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner and Agency construction personnel.
1. Construction Schedule: Inform Owner/Agency of Contractor's preferred construction schedule for Owner/Agency portion of the Work. Adjust construction

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

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

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
   1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
   2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
      a. Use containers intended for holding waste materials of type to be stored.
   4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 01 50 00 "Temporary Facilities and Controls.”

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

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

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

3.8 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: Comply with qualification requirements in Section 01 40 00 "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

B. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Substantial Completion procedures.
   2. Final completion procedures.
   3. Warranties.
   4. Final cleaning.
   5. Repair of the Work.

C. Related Requirements:
   1. Section 01 78 23 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
   2. Section 01 79 00 "Demonstration and Training" for requirements to train the Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at final completion.

1.3 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Idaho Division of Public Works Close-Out requirements, including “Conditions Precedent to Final Payment” list. The “Project Finalization” form is required unless specifications indicate otherwise.

1.4 SUBSTANTIAL COMPLETION PROCEDURES

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

B. Submittals Prior to Substantial Completion: Complete the following a minimum of seven (7) days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
   1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
   2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
   3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
   4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.
   5. Submit sustainable design submittals not previously submitted.
   6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
   7. A final report of Special Inspections to be attached to the Substantial Completion. If no Special Inspections are required, Design Professional can initial as such on the Substantial Completion form.
   8. Submit O&M Manuals for compliance with the contract documents.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of seven (7) days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
   1. Advise Owner of pending insurance changeover requirements.
   2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
   3. Complete startup and testing of systems and equipment.
   4. Perform preventive maintenance on equipment used prior to Substantial Completion.
   5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 01 79 00 "Demonstration and Training."
   6. Advise Owner of changeover in utility services.
   7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
   8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
   9. Complete final cleaning requirements.
   10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of ten (10) days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

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

1.5 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
   1. Submit final Application for Payment according to Section 01 29 00 "Payment Procedures".
   2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
   3. Idaho Division of Public Works Close-Out requirements.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will approve/initial punch list after inspection or will notify Contractor of construction that must be completed or corrected before final documents will be signed.

1.6 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

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

1.7 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within ten (10) days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

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

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

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

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 FINAL CLEANING

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

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

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

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

3.2 REPAIR OF THE WORK

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

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

B. Repair, or remove and replace, defective construction

END OF SECTION

SECTION 01 78 23

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
   1. Architect and Agency will comment on whether content of operation and maintenance submittals is acceptable.
   2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operation and maintenance manuals in the following format:
   1. Submit on digital media acceptable to Architect.
   2. Submit three paper copies. Architect will return two copies.

C. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 7 (seven) days before commencing demonstration and training. Architect will return copy with comments.
   1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

D. Comply with Section 01 77 00 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.3 FORMAT OF OPERATION AND MAINTENANCE MANUALS

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

2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.
   1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
   2. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
      a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
      b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.4 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
   1. Title page.
   2. Table of contents.
   3. Manual contents.

B. Title Page: Include the following information:
   1. Subject matter included in manual.
   2. Name and address of Project.
   3. Name and address of Owner.
   4. Date of submittal.
   5. Name and contact information for Contractor.
   6. Name and contact information for Construction Manager.
   7. Name and contact information for Architect.
   8. Name and contact information for Commissioning Authority.
   9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
   10. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.5 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:
   1. Type of emergency.
   2. Emergency instructions.
   3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
   1. Fire.
   2. Flood.
   3. Gas leak.
   4. Water leak.
   5. Power failure.
   6. Water outage.
   7. System, subsystem, or equipment failure.
   8. Chemical release or spill.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:
   1. Instructions on stopping.
   2. Shutdown instructions for each type of emergency.
   3. Operating instructions for conditions outside normal operating limits.
   4. Required sequences for electric or electronic systems.
   5. Special operating instructions and procedures.

1.6 SYSTEMS AND EQUIPMENT OPERATION MANUALS

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

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

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

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

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

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

1.7 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

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

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds, as described below.

C. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:
   1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
      a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
   2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
   3. Identification and nomenclature of parts and components.
   4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
   1. Test and inspection instructions.
   2. Troubleshooting guide.
   3. Precautions against improper maintenance.
   4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
   5. Aligning, adjusting, and checking instructions.
   6. Demonstration and training video recording, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
   1. Include procedures to follow and required notifications for warranty claims.

H. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1.8 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

C. Product Information: Include the following, as applicable:
   1. Product name and model number.
   2. Manufacturer's name.
   3. Color, pattern, and texture.
   4. Material and chemical composition.
   5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
   1. Inspection procedures.
   2. Types of cleaning agents to be used and methods of cleaning.
   3. List of cleaning agents and methods of cleaning detrimental to product.
   4. Schedule for routine cleaning and maintenance.
   5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
   1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:
   1. Record Drawings.
   2. Record Specifications.
   3. Record Product Data.

B. Related Requirements:
   1. Section 01 73 00 "Execution" for final property survey.
   2. Section 01 78 23 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:
   1. Number of Copies: Submit one set(s) of marked-up record prints.
   2. Number of Copies: Submit copies of record Drawings as follows:
      a. Initial Submittal:
         1) Submit one paper-copy set(s) of marked-up record prints.
         2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
      b. Final Submittal:
         1) Submit one paper-copy set of marked-up record prints.
         2) Architect will review for completeness.

B. Record Specifications: Submit one paper copy annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one paper copy annotated PDF electronic files and directories of each submittal.
   1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

1.3 RECORD DRAWINGS

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

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

2. Content: Types of items requiring marking include, but are not limited to, the following:
a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations.
d. Locations and depths of underground utilities.
e. Revisions to routing of piping and conduits.
f. Revisions to electrical circuitry.
g. Actual equipment locations.
h. Duct size and routing.
i. Locations of concealed internal utilities.
j. Changes made by Change Order or Construction Change Directive.
k. Changes made following Architect's written orders.
l. Details not on the original Contract Drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
2. Format: DWG, Version , Microsoft Windows operating system.
3. Format: Annotated PDF electronic file with comment function enabled.
4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
5. Refer instances of uncertainty to Architect for resolution.
6. Architect will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.
a. See Section 01 31 00 "Project Management and Coordination" for requirements related to use of Architect's digital data files.
b. Architect will provide data file layer information. Record markups in separate layers.

C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints into manageable sets. If required, bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file with comment function enabled.

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

1.4 RECORD SPECIFICATIONS

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

B. Format: Submit record Specifications as paper copy or scanned PDF electronic file(s) of marked-up paper copy of Specifications.

1.5 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

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

C. Format: Submit record Product Data as scanned PDF electronic file(s) of marked-up paper copy of Product Data.
1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

1.6 MAINTENANCE OF RECORD DOCUMENTS

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

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 79 00

DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 INFORMATIONAL SUBMITTALS

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

1.3 CLOSEOUT SUBMITTALS

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

1.4 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 01 40 00 "Quality Requirements," experienced in operation and maintenance procedures and training.

C. Preconstruction Conference: Conduct conference at Project site to comply with requirements in Section 01 31 00 "Project Management and Coordination."

1.5 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.6 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
   1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
      a. System, subsystem, and equipment descriptions.
      b. Performance and design criteria if Contractor is delegated design responsibility.
      c. Operating standards.
      d. Regulatory requirements.
      e. Equipment function.
      f. Operating characteristics.
      g. Limiting conditions.
      h. Performance curves.
   2. Documentation: Review the following items in detail:
      a. Emergency manuals.
      b. Systems and equipment operation manuals.
      c. Systems and equipment maintenance manuals.
      d. Product maintenance manuals.
      e. Project Record Documents.
      f. Identification systems.
      g. Warranties and bonds.
      h. Maintenance service agreements and similar continuing commitments.
   3. Emergencies: Include the following, as applicable:
      a. Instructions on meaning of warnings, trouble indications, and error messages.
      b. Instructions on stopping.
      c. Shutdown instructions for each type of emergency.
      d. Operating instructions for conditions outside of normal operating limits.
      e. Sequences for electric or electronic systems.
      f. Special operating instructions and procedures.
   4. Operations: Include the following, as applicable:

a. Startup procedures.
b. Equipment or system break-in procedures.
c. Routine and normal operating instructions.
d. Regulation and control procedures.
e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:
   a. Alignments.
   b. Checking adjustments.
   c. Noise and vibration adjustments.
   d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
   a. Diagnostic instructions.
   b. Test and inspection procedures.
7. Maintenance: Include the following:
   a. Inspection procedures.
   b. Types of cleaning agents to be used and methods of cleaning.
   c. List of cleaning agents and methods of cleaning detrimental to product.
   d. Procedures for routine cleaning.
   e. Procedures for preventive maintenance.
   f. Procedures for routine maintenance.
   g. Instruction on use of special tools.
8. Repairs: Include the following:
   a. Diagnosis instructions.
   b. Repair instructions.
   c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
   d. Instructions for identifying parts and components.
   e. Review of spare parts needed for operation and maintenance.

1.7 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 01 78 23 "Operation and Maintenance Data."

B. Set up instructional equipment at instruction location.

1.8 INSTRUCTION

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

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

C. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
   1. Schedule training with Owner with at least ten (10) days' advance notice.

D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

E. Cleanup: Collect used and leftover educational materials and remove from Project. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.9 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

A. General: Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
   1. At beginning of each training module, record each chart containing learning objective and lesson outline.

B. Digital Video Recordings: Provide high-resolution, digital video.
   1. Submit video recordings on USB thumb drive.

C. Recording: Display continuous running time.

D. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION

Copyright Release Agreement

Project: ITD D4 Stanley HUD Manufactured Home & Site Design
Myers Anderson Architects Project Number: 23607

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

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

_____ 1. These electronically reproduced document copies are only for the use of this Contractor (Sub-Contractor); and only as an aid in the production of this Contractor's (Sub-Contractor's) portion of the Work.

_____ 2. All title blocks and other references to Myers Anderson Architects, PLLC, the Architect of Record, the Consultant(s), and the Owner shall be removed.

_____ 3. This Contractor (Sub-Contractor) shall remove all notes, text, and detail cuts from the electronic file prior to use.

_____ 4. This Contractor (Sub-Contractor) agrees to the following indemnity clause:

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

Contractor (Sub-contractor) Company: _____

Officer & Title (Printed): _____

Officer & Title (Signed): _____

Date: _____

_____
Myers Anderson Architects, PLLC

Representative & Title (Printed): _____

Representative & Title (Signed): _____

Date: _____

122 South Main Street, Suite 1
Pocatello, Idaho 83204
P 208.232.3741
F 208.232.3782
www.myersanderson.com

REQUEST FOR INTERPRETATION

R.F.I. No: _____ To: _____

Date: _____ Project Name: _____

Regarding: _____ Contract For: _____

From: _____ Project No: _____

Specification Section **Paragraph** **Drawing No** **Detail**

Request:

Signed by: _____ **Date:** _____

Response:

Signed by: _____ **Date:** _____

Date Rec'd: **Date Ret'd:** **Attachments**

Copies: **□Architect** **□Contractor** **□Consultant** **□Owner** **□ Others**

SUBSTITUTION REQUEST

(During the Bidding Phase)

Project: _____ Substitution Request Number: _____

_____ From: _____

To: _____ Date: _____

_____ A/E Project Number: _____

Re: _____ Contract For: _____

_____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

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

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

The Undersigned certifies:

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

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

Telephone: _____

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 33 00.

☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00.

☐ Substitution rejected - Use specified materials.

☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

Supporting Data Attached ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

DIVISION 03 CONCRETE

SECTION 03 10 00

CONCRETE FORMING AND ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Formwork for cast-in place concrete.
2. Shoring, bracing, and anchorage.
3. Form accessories.
4. Form stripping.

B. Related Sections:
1. Section 03 20 00 - Concrete Reinforcing.
2. Section 03 30 00 - Cast-In-Place Concrete.
3. Section 32 13 13 – Site Concrete Paving: Forming for sidewalks.

1.2 REFERENCES

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

1.3 DESIGN REQUIREMENTS

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

1.4 QUALITY ASSURANCE

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

1.5 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Products storage and handling requirements.

B. Deliver void forms and installation instructions in manufacturer's packaging.

C. Store off ground in ventilated and protected manner to prevent deterioration from moisture.

1.6 COORDINATION

A. Section 01 31 00 – Project Management and Coordination

B. Coordinate this Section with other sections of work, requiring attachment of components to formwork.

PART 2 PRODUCTS

2.1 WOOD FORM MATERIALS

A. Plywood: Douglas Fir species; select sheathing, tight face grade; sound undamaged sheets with clean, true edges.

B. Lumber Forms:
   1. Application: Use for edge forms and unexposed finish concrete.
   2. Boards: nominal 2", "Standard" Grade Douglas Fir, conforming to WCLIB Standard Grading Rules for West Coast Lumber. Surface boards on four sides.

C. Plywood Forms:
   1. Application: Use for exposed finish concrete.
   2. Forms: Conform to PS 1; full size 4 x 8 feet panels; each panel labeled with grade trademark of APA/EWA.
   3. Plywood for Surfaces to Receive Membrane Waterproofing: Minimum of 5/8 inch thick; APA/EWA "B-B Plyform Structural I Exterior" grade.
   4. Plywood where "Smooth Finish" is required, as indicated on Drawings: APA/EWA "HD Overlay Plyform Structural I Exterior" grade, minimum of 3/4 inch thick.

2.2 PREFABRICATED FORMS

A. Preformed Steel Forms: Minimum 16 gage matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.

B. Glass Fiber Fabric Reinforced Plastic Forms: Matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished concrete surfaces.

C. Tubular Column Type: Round, spirally wound laminated fiber material; surface treated with release agent, non-reusable, sizes as indicated on Drawings.

D. Steel Forms: Sheet steel, suitably reinforced, and designed for particular use indicated on Drawings.

E. Framing, Studding and Bracing: Stud or No. 3 structural light framing grade.

2.3 FORMWORK ACCESSORIES

A. Form Ties: type, metal, fixed length, cone type, free of defects capable of leaving holes larger than 1 inch in concrete surface.

B. Spreaders: Standard, non-corrosive metal form clamp assembly, of type acting as spreaders and leaving no metal within 1 inch of concrete face. Wire ties, wood spreaders or through bolts are not permitted. Form Release Agent: Colorless mineral oil that will not stain concrete, or absorb moisture, or impair natural bonding or color characteristics of coating intended for use on concrete.
   1. Manufacturers:
      a. Arcal Chemical Corporation Arcal-80.
      b. Industrial Synthetics Company Synthex.
      c. Nox-Crete Company Nox-Crete Form Coating.
      d. Substitutions: Section 01 60 00 - Product Requirements

C. Bituminous Joint Filler: ASTM D1751.

D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Size, strength and character to maintain formwork in place while placing concrete.

E. Water Stops: Rubber, minimum 1,750 psi tensile strength, minimum 50 degrees F to plus 175 degrees F working temperature range, inch wide, maximum possible lengths, ribbed profile, preformed corner sections, heat welded jointing.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 73 00 - Execution

B. Verify lines, levels, and centers before proceeding with formwork. Verify dimensions agree with Drawings.

C. When formwork is placed after reinforcement resulting in insufficient concrete cover over reinforcement before proceeding, request instructions from Architect/Engineer.

3.2 INSTALLATION

A. Earth Forms:
   1. Earth forms are not permitted.

B. Formwork - General:
   1. Provide top form for sloped surfaces steeper than 1.5 horizontal to 1 vertical to hold shape of concrete during placement, unless it can be demonstrated that top forms can be omitted.
   2. Construct forms to correct shape and dimensions, mortar-tight, braced, and of sufficient strength to maintain shape and position under imposed loads from construction operations.
   3. Camber forms where necessary to produce level finished soffits unless otherwise shown on Drawings.
   4. Carefully verify horizontal and vertical positions of forms. Correct misaligned or misplaced forms before placing concrete.
   5. Complete wedging and bracing before placing concrete.

C. Forms for Smooth Finish Concrete:
   1. Use steel, plywood or lined board forms.
   2. Use clean and smooth plywood, uniform in size, and free from surface and edge damage capable of affecting resulting concrete finish.
   3. Use full size sheets of form lines and plywood wherever possible.
   4. Use care in forming and stripping wood forms to protect corners and edges.
   5. Level and continue horizontal joints.

D. Framing, Studding and Bracing:
   1. Size framing, bracing, centering, and supporting members with sufficient strength to maintain shape and position under imposed loads from construction operations.
   2. Construct beam soffits of material minimum of 2 inches thick.
   3. Distribute bracing loads over base area on which bracing is erected.
   4. When placed on ground, protect against undermining, settlement or accidental impact.

E. Erect formwork, shoring, and bracing to achieve design requirements, in accordance with requirements of ACI 301 and ACI 318.

F. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.

G. Obtain Architect/Engineer’s approval before framing openings in structural members not indicated on Drawings.

H. Install chamfer strips on external corners of beams and columns.

I. Install void forms in accordance with manufacturer's recommendations.

3.3 APPLICATION - FORM RELEASE AGENT

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

B. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.

C. Do not apply form release agent where concrete surfaces are indicated to receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

D. Reuse and Coating of Forms: Thoroughly clean forms and reapply form coating before each reuse. For exposed work, do not reuse forms with damaged faces or edges. Apply form coating to forms in accordance with manufacturer's specifications. Do not coat forms for concrete indicated to receive "scored finish". Apply form coatings before placing reinforcing steel.

3.4 INSTALLATION - INSERTS, EMBEDDED PARTS, AND OPENINGS

A. Install formed openings for items to be embedded in or passing through concrete work.

B. Locate and set in place items required to be cast directly into concrete.

C. Coordinate with Work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other Work.

D. Install accessories straight, level, and plumb. Ensure items are not disturbed during concrete placement.

E. Install water stops continuous without displacing reinforcement.

F. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain.

G. Close temporary openings with tight fitting panels, flush with inside face of forms, and neatly fitted so joints will not be apparent in exposed concrete surfaces.

H. Form Ties:
1. Use sufficient strength and sufficient quantity to prevent spreading of forms.
2. Place ties at least 1 inch away from finished surface of concrete.
3. Leave inner rods in concrete when forms are stripped.
4. Space form ties equidistant, symmetrical and aligned vertically and horizontally unless otherwise shown on Drawings.

I. Arrangement: Arrange formwork to allow proper erection sequence and to permit form removal without damage to concrete.

J. Construction Joints:
1. Install surfaced pouring strip where construction joints intersect exposed surfaces to provide straight line at joints.
2. Just prior to subsequent concrete placement, remove strip and tighten forms to conceal shrinkage.
3. Show no overlapping of construction joints. Construct joints to present same appearance as butted plywood joints.
4. Arrange joints in continuous line straight, true and sharp.

K. Embedded Items:
1. Make provisions for pipes, sleeves, anchors, inserts, reglets, anchor slots, nailers, water stops, and other features.
2. Do not embed wood or uncoated aluminum in concrete.
3. Obtain installation and setting information for embedded items furnished under other Specification sections.
4. Securely anchor embedded items in correct location and alignment prior to placing concrete.
5. Verify conduits and pipes, including those made of coated aluminum, meet requirements of ACI 318 for size and location limitations.

L. Openings for Items Passing Through Concrete:

1. Frame openings in concrete where indicated on Drawings. Establish exact locations, sizes, and other conditions required for openings and attachment of work specified under other sections.
2. Coordinate work to avoid cutting and patching of concrete after placement.
3. Perform cutting and repairing of concrete required as result of failure to provide required openings.

M. Screeds:
1. Set screeds and establish levels for tops of concrete slabs and levels for finish on slabs.
2. Slope slabs to drain where required or as shown on Drawings.
3. Before depositing concrete, remove debris from space to be occupied by concrete and thoroughly wet forms. Remove freestanding water.

N. Screed Supports:
1. For concrete over waterproof membranes and vapor retarder membranes, use cradle, pad or base type screed supports which will not puncture membrane.
2. Staking through membrane is not permitted.

O. Cleanouts and Access Panels:
1. Provide removable cleanout sections or access panels at bottoms of forms to permit inspection and effective cleaning of loose dirt, debris and waste material.
2. Clean forms and surfaces against which concrete is to be placed. Remove chips, saw dust and other debris. Thoroughly blow out forms with compressed air just before concrete is placed.

3.5 FORM CLEANING

A. Clean forms as erection proceeds, to remove foreign matter within forms.

B. Clean formed cavities of debris prior to placing concrete.

C. Flush with water or use compressed air to remove remaining foreign matter. Ensure that water and debris drain to exterior through clean-out ports.

D. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out forms, unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove foreign matter.

3.6 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads and removal has been approved by Architect/Engineer.

B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.

C. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.

D. Leave forms in place for minimum number of days as specified in ACI 347.

3.7 ERECTION TOLERANCES

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

3.8 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and that supports, fastenings, wedges, ties, and items are secure.

C. Notify Architect/Engineer after placement of reinforcing steel in forms, but prior to placing concrete.

D. Schedule concrete placement to permit formwork inspection before placing concrete.

END OF SECTION

SECTION 03 20 00

CONCRETE REINFORCING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Reinforcing bars.
   2. Welded wire fabric.
   3. Reinforcement accessories.

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

1.2 REFERENCES

A. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 318 - Building Code Requirements for Structural Concrete.
   3. ACI 530.1 - Specifications for Masonry Structures.
   4. ACI SP-66 - ACI Detailing Manual.

B. ASTM International:
   1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
   2. ASTM A185 - Standard Specification for Steel welded wire reinforcing plan for concrete.
   3. ASTM A496 - Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement.
   4. ASTM A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement.
   5. ASTM A615/A615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.

C. American Welding Society:
   1. AWS D1.4 - Structural Welding Code - Reinforcing Steel.

D. Concrete Reinforcing Steel Institute:
   1. CRSI - Manual of Standard Practice.
   2. CRSI - Placing Reinforcing Bars.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings: Indicate bar sizes, spacing, locations, and quantities of reinforcing steel and welded wire fabric, bending and cutting schedules, and supporting and spacing devices.

C. Certificates: Submit AWS qualification certificate for welders employed on the Work.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.
   1. Submit certified copies of mill test report of reinforcement materials analysis.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with CRSI - Manual of Standard Practice ACI 301 and ACI 318.

B. Prepare shop drawings in accordance with ACI SP-66.

1.5 QUALIFICATIONS

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

1.6 COORDINATION

A. Section 01 31 00 – Project Management and Coordination

B. Coordinate with placement of formwork, formed openings and other Work.

PART 2 PRODUCTS

2.1 REINFORCEMENT

A. Deformed Reinforcement: ASTM A615/A615M; 60 ksi yield strength, steel bars, unfinished.

B. Plain Wire: ASTM A82; unfinished.

2.2 ACCESSORY MATERIALS

A. Tie Wire: Minimum 16 gage annealed type

B. Chairs, Bolsters, Bar Supports, and Spacers: Sized and shaped for strength and support of reinforcement during concrete placement conditions.

C. Special Chairs, Bolsters, Bar Supports, Spacers Adjacent to Weather Exposed Concrete Surfaces: type; size and shape to meet Project conditions.

2.3 FABRICATION

A. Fabricate concrete reinforcement in accordance with CRSI Manual of Practice ACI 318 and applicable code.

B. Form standard hooks for stirrup and tie hooks, and seismic hooks as indicated on Drawings.

C. Form reinforcement bends with minimum diameters in accordance with ACI 318 applicable code.

D. Fabricate column reinforcement with offset bends at reinforcement splices.

E. Weld reinforcement in accordance with AWS D1.4.

F. Locate reinforcement splices not indicated on Drawings, at point of minimum stress. Review location of splices with Architect/Engineer.

PART 3 EXECUTION

3.1 PLACEMENT

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

B. Do not displace or damage vapor retarder.

C. Accommodate placement of formed openings.

D. Space reinforcement bars with minimum clear spacing in accordance with ACI 318.
   1. Where bars are indicated in multiple layers, place upper bars directly above lower bars.

E. Maintain concrete cover around reinforcement as follows:

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

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

3.2 ERECTION TOLERANCES

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

3.3 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Perform field inspection and testing in accordance with ACI 318.

C. Provide free access to Work and cooperate with appointed firm.

D. Reinforcement Inspection:
   1. Placement Acceptance: Specified and ACI 318 material requirements and specified placement tolerances.
   2. Welding: Inspect welds in accordance with AWS D1.1.
   3. Periodic Placement Inspection: Inspect for correct materials, fabrication, sizes, locations, spacing, concrete cover, and splicing.
   4. Weldability Inspection: Inspect for reinforcement weldability when formed from steel other than ASTM A706/A706M.
   5. Periodic Weld Inspection: Other welded connections.

3.4 SCHEDULES

A. See structural drawing and notes.

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes cast-in-place concrete for the following:
   1. Foundation walls.
   2. Slabs on grade.
   3. Control, expansion and contraction joint devices.

B. Related Sections:
   1. Section 03 10 00 - Concrete Forming and Accessories: Formwork and accessories.
   2. Section 03 20 00 - Concrete Reinforcing.
   3. Section 03 35 00 - Concrete Finishing.
   4. Section 03 39 00 - Concrete Curing.
   5. Section 32 13 13 – Site Concrete Paving.

1.2 REFERENCES

A. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 305 - Hot Weather Concreting.
   3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
   4. ACI 308.1 - Standard Specification for Curing Concrete.
   5. ACI 318 - Building Code Requirements for Structural Concrete.

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

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

1.3 PERFORMANCE REQUIREMENTS

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

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data on joint devices, attachment accessories, and admixtures.

C. Design Data:
   1. Submit a separate concrete mix design for each concrete strength. Submit separate mix designs when admixtures are required for the following:
      a. Hot and cold weather concrete work.
      b. Air entrained concrete work.
   2. Identify mix ingredients and proportions, including admixtures.
   3. Identify chloride content of admixtures and whether or not chloride was added during manufacture.
   4. Submit the aggregate sieve analysis per ASTM C-117.

D. Manufacturer's Installation Instructions: Submit installation procedures and interface required with adjacent Work.

1.5 CLOSEOUT SUBMITTALS

A. Section 01 77 00 - Closeout Procedures: Closeout Submittals.

B. Project Record Documents: Accurately record actual locations of embedded utilities and components concealed from view in finished construction.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 301.

B. Conform to ACI 305 when concreting during hot weather.

C. Conform to ACI 306.1 when concreting during cold weather.

D. Acquire cement and aggregate from one source for Work

1.7 ENVIRONMENTAL REQUIREMENTS

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

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

1.8 COORDINATION

A. Section 01 31 00 – Project Management and Coordination

B. Coordinate placement of joint devices with erection of concrete formwork and placement of form accessories.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

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

B. Water: ACI 318; potable.

2.2 ADMIXTURES

A. Air Entrainment: ASTM C260.

B. Chemical: Not allowed without prior written permission of the Architect. .

C. Fly Ash, Calcined Pozzolan: Not allowed without prior written permission of the Architect.

D. Silica Fume: ASTM C1240.

E. Plasticizing: Not allowed without prior written permission of the Architect.

2.3 ACCESSORIES

A. Non-Shrink Grout: ASTM C1107, premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 48 hours and 7,000 psi in 28 days.

B. Concrete Reinforcing Fibers: ASTM C1116, high strength industrial-grade fibers specifically engineered for secondary reinforcement of concrete. Tensile strength -130 ksi; toughness 15 ksi; fiber length to be graded, 34 million/lb fiber count.

2.4 JOINT DEVICES AND FILLER MATERIALS

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

2.5 CONCRETE MIX

A. Select proportions for concrete in accordance with ACI 318 field experience.

B. Provide concrete to the following criteria:
   1. All exposed exterior slab on grade, stem wall, columns and beams.

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

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

2. All footings

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

3. All Interior slab-on-grade

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

C. Admixtures: Include admixture types and quantities indicated in concrete mix designs only when approved by Architect/Engineer.
   1. Use accelerating admixtures in cold weather. Use of admixtures will not relax cold weather placement requirements.
   2. Do not use calcium chloride or admixtures containing calcium chloride.

3. Use set retarding admixtures during hot weather.
4. Add air entrainment admixture to concrete mix for work exposed to freezing and thawing.

D. Average Compressive Strength Reduction: Not permitted.

E. Ready Mixed Concrete: Mix and deliver concrete in accordance with ASTM C94/C94M.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 73 00 - Execution

B. Verify requirements for concrete cover over reinforcement.

C. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with placing concrete.

3.2 PREPARATION

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Remove laitance, coatings, and unsound materials.

B. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

C. Remove debris and ice from formwork, reinforcement, and concrete substrates.

D. Remove water from areas receiving concrete before concrete is placed.

3.3 PLACING CONCRETE

A. Place concrete in accordance with ACI 301 and ACI 318.

B. Notify testing laboratory and Architect minimum 24 hours prior to commencement of operations.

C. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints, and are not disturbed during concrete placement. Separate exterior slabs on grade from vertical surfaces with 1/2 inch thick joint filler.

D. Place joint filler in floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.

E. Extend joint filler from bottom of slab to within 1/4 inch of finished slab surface.

F. Install construction joint devices in coordination with floor slab pattern placement sequence. Set top to required elevations. Secure to resist movement by wet concrete.

G. Deposit concrete at final position. Prevent segregation of mix.

H. Place concrete in continuous operation for each panel or section determined by predetermined joints.

I. Consolidate concrete.

J. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

K. Place concrete continuously between predetermined expansion, control, and construction joints.

L. Do not interrupt successive placement; do not permit cold joints to occur.

M. Place floor slabs in long strip construction with saw cut pattern indicated.

N. Saw cut joints within 12 hours after placing. Use 3/16 inch thick blade, cut into 1/4 depth of slab thickness (maximum 1” deep).

O. Screed floors and slabs on grade level, maintaining surface flatness of maximum 1/8 inch in 10 ft.

P. Slope floor to floor drains at minimum of 1/8 inch per one foot.

3.4 CONCRETE FINISHING

A. Provide formed vertical concrete surfaces to be left exposed with sack rubbed finish.

B. Finish concrete floor surfaces to requirements of Section 03 35 00.

C. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1/8 inch per foot nominal as indicated on drawings.

D. Provide control joint or saw cut at grade break line where floor slopes to floor drain.

3.5 CURING AND PROTECTION

A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
   1. Protect concrete footings from freezing for minimum 5 days.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. Cure concrete floor surfaces as specified in Section 03 39 00.

3.6 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Perform field inspection and testing in accordance with ACI 318 and applicable code.

C. Provide free access to Work and cooperate with appointed firm.

D. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of Work.

E. Strength Test Samples:
   1. Sampling Procedures: ASTM C172.
   2. Cylinder Molding and Curing Procedures: ASTM C31/C31M, cylinder specimens, field cured.
   3. Sample concrete and make one set of three cylinders for every 25 cu yds or less of each class of concrete placed and one set of three cylinders or every 100 cu yd thereafter.
   4. Make one additional cylinder during cold weather concreting, and field cure.

F. Field Testing:
   1. Slump Test Method: ASTM C143/C143M.
   2. Air Content Test Method: ASTM C173/C173M and ASTM C231.
   3. Temperature Test Method: ASTM C1064/C1064M.
   4. Measure slump and temperature for each compressive strength concrete sample.
   5. Measure air content in air entrained concrete for each compressive strength concrete sample.

G. Cylinder Compressive Strength Testing:
   1. Test Method: ASTM C39.
   2. Test Acceptance: In accordance with ACI 318.
   3. Test one cylinder at 7 days.

4. Test two cylinders at 28 days.
5. Dispose remaining cylinders when testing is not required.

H. Maintain records of concrete placement. Record date, location, quantity, air temperature and test samples taken.

3.7 PATCHING

A. Allow Architect/Engineer to inspect concrete surfaces immediately upon removal of forms.

B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Architect/Engineer upon discovery.

C. Patch imperfections as directed by Architect.

3.8 DEFECTIVE CONCRETE

A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

B. Repair or replacement of defective concrete will be determined by Architect/Engineer.

C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect/Engineer for each individual area.

3.9 SCHEDULE - CONCRETE TYPES AND FINISHES

A. Refer to structural drawings.

END OF SECTION

SECTION 03 35 00

CONCRETE FINISHING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Finishing concrete floors.

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

1.2 REFERENCES

A. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 302.1 - Guide for Concrete Floor and Slab Construction.

B. ASTM International:
   1. ASTM E1155 - Standard Test Method for Determining Floor Flatness and of Levelness Using the F-number System.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data on concrete hardener, sealer, compatibilities, and limitations.

1.4 CLOSEOUT SUBMITTALS

A. Section 01 77 00 - Closeout Procedures: Closeout submittals.

B. Operation and Maintenance Data: Submit data on maintenance renewal of applied coatings.

1.5 QUALITY ASSURANCE

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

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

B. Applicator Installer: Company specializing in performing work of this section with minimum three years experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Deliver materials in manufacturer's packaging including application instructions.

1.8 ENVIRONMENTAL REQUIREMENTS

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

B. Temporary Lighting: Minimum 200 W light source, placed 8 feet above floor surface, for each 425 sq ft of floor being finished.

C. Do not finish floors until ambient temperature reaches of minimum 50 degrees F.

D. Ventilation: Sufficient to prevent injurious gases from temporary heat or other sources affecting concrete.

1.9 COORDINATION

A. Section 01 31 00 – Project Management and Coordination.

B. Coordinate the Work with concrete floor placement and concrete floor curing.

PART 2 PRODUCTS

2.1 MANUFACTURERS

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

2.2 COMPOUNDS - HARDENERS AND SEALERS

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

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

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 73 00 - Execution

B. Verify floor surfaces are acceptable to receive the Work of this section.

3.2 FLOOR FINISHING

A. Finish concrete floor surfaces in accordance with ACI 301 and ACI 302.1.

B. Steel trowel finish on surfaces receiving carpeting, resilient flooring, seamless flooring, and thin set ceramic tile.

C. Steel trowel finish on surfaces indicated to be exposed.

D. Broom finish on surface indicated to be exposed, with broom finish texture as selected by architect.

E. In areas with floor drains, maintain design floor elevation at walls; slope surfaces uniformly to drains at 1/8 inch per foot nominal as indicated on Drawings.

3.3 FLOOR SURFACE TREATMENT

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

B. Apply sealer on floor surfaces in accordance with manufacturer instructions.

3.4 TOLERANCES

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

B. Maximum Variation of Surface Flatness For Exposed Concrete Floors: 1/8 inch in 10 ft.

C. Maximum Variation of Surface Flatness Under Seamless Resilient Flooring: 1/8 inch in 10 ft.

D. Maximum Variation of Surface Flatness under Carpeting: 1/8 inch in 10 ft. Correct defects in defined traffic floor by grinding or removal and replacement of defective Work. Areas requiring corrective Work will be identified. Re-measure corrected areas by same process.

3.5 SCHEDULES

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

END OF SECTION

SECTION 03 39 00

CONCRETE CURING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes initial and final curing of horizontal and vertical concrete surfaces.

B. Related Sections:
   1. Section 03 30 00 - Cast-In-Place Concrete.
   2. Section 03 35 00 - Concrete Finishing.

1.2 REFERENCES

A. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 302.1 - Guide for Concrete Floor and Slab Construction.
   3. ACI 308.1 - Standard Specification for Curing Concrete.
   4. ACI 318 - Building Code Requirements for Structural Concrete.

B. ASTM International:
   1. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete.
   2. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
   3. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
   4. ASTM D2103 - Standard Specification for Polyethylene Film and Sheeting.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data on curing compounds, compatibilities, and limitations.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with ACI 301 or ACI 302.1 or ACI 318.

B. Curing compound shall be compatible with concrete sealer specified in Section 03 35 00

1.5 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Deliver curing materials in manufacturer's packaging including application instructions.

PART 2 PRODUCTS

2.1 MATERIALS

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

d. Nox-Crete Chemicals.
e. Sika Corp.
f. Substitutions: Section 01 60 00 - Product Requirement:

B. Water: Potable, not detrimental to concrete.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 73 00 - Execution

B. Verify substrate surfaces are ready to be cured.

3.2 INSTALLATION - HORIZONTAL SURFACES

A. Cure concrete in accordance with ACI 308.1.

B. Membrane Curing Compound: Apply curing compound in two coats with second coat applied at right angles to first.

3.3 INSTALLATION - VERTICAL SURFACES

A. Cure concrete in accordance with ACI 308.1.

B. Membrane Curing Compound: Apply compound in two coats with second coat applied at right angles to first.

3.4 PROTECTION OF FINISHED WORK

A. Section 01 73 00 - Execution: Protection of installed construction.

B. Do not permit traffic over unprotected floor surface.

END OF SECTION

SECTION 03 60 00

GROUTING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Non-shrink cementitious grout.

B. Related Sections:
   1. Section 03 30 00 - Cast-In-Place Concrete.

1.2 REFERENCES

A. American Concrete Institute:
   1. ACI 301 - Specifications for Structural Concrete.
   2. ACI 318 - Building Code Requirements for Structural Concrete.

B. American Society of Testing and Materials:
   1. ASTM C33 - Standard Specification for Concrete Aggregates.
   2. ASTM C40 - Test Method for Organic Impurities in Fine Aggregates for Concrete.
   3. ASTM C150 - Standard Specification for Portland Cement.
   4. ASTM C191 - Test Method for Time of Setting of Hydraulic Cement by Vicat Needle.
   5. ASTM C307 - Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacings.
   6. ASTM C531 - Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes.
   7. ASTM C579 - Test Method for Compressive Strength of Chemical-Resistant Mortars, Grouts, monolithic Surfacings and Polymer Concretes.
   8. ASTM C827 - Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures.

C. U. S. Army Corps of Engineers Concrete Research Division (CRD):
   1. CRD C621 - Non-Shrink Grout.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit product data on grout.

C. Manufacturer's Installation Instructions: Submit manufacturer’s instructions for mixing, handling, surface preparation and placing epoxy type and non-shrink type grouts.

D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.4 DELIVERY, STORING, AND HANDLING

A. Section 01 60 00 – Product Requirements: Requirements for transporting, handling, storing and protecting products.

B. Deliver grout in manufacturer’s unopened containers with proper labels intact.

C. Store in a dry shelter, protect from moisture.

1.5 ENVIRONMENTAL REQUIREMENTS

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

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

PART 2 PRODUCTS

2.1 PORTLAND CEMENT GROUT MATERIALS

A. Portland Cement: ASTM C150, Type I and II.

B. Water:
1. Potable; containing no impurities, suspended particles, algae or dissolved natural salts in quantities capable of causing:
   a. Corrosion of steel.
   b. Volume change increasing shrinkage cracking.
   c. Efflorescence.
   d. Excess air entraining.

C. Fine Aggregate:
1. Washed natural sand.
2. Gradation in accordance with ASTM C33 and represented by smooth granulometric curve within required limits.
3. Free from injurious amounts of organic impurities as determined by ASTM C40.

D. Mix:
1. Portland cement, sand and water. Do not use ferrous aggregate or staining ingredients in grout mixes.

2.2 RAPID CURING EPOXY GROUT

A. Manufacturers:
1. Sika Model.
2. L & M Construction Chemicals Inc.
3. Substitutions: Section 01 60 00 - Product Requirements.

B. Non-Shrink Cementitious Grout
1. Pre-mixed ready for use formulation requiring only addition of water; non-shrink, non-corrosive, non-metallic, non-gas forming, no chlorides.
2. Properties: Certified to maintain initial placement volume or expand after set and meet the following minimum properties when tested in accordance with CRD-C621, for Type D non-shrink grout:

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

2.3 FORMWORK

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

2.4 CURING

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

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 73 00 - Execution: Verification of existing conditions before starting work.

B. Verify areas to receive grout.

3.2 PREPARATION

A. Remove defective concrete, laitance, dirt, oil, grease and other foreign material from concrete surfaces by brushing, hammering, chipping or other similar means until sound, clean concrete surface is achieved.

B. Rough concrete lightly, but not enough to interfere with placement of grout.

C. Remove foreign materials from metal surfaces in contact with grout.

D. Align, level and maintain final positioning of components to be grouted.

E. Saturate concrete surfaces with clean water; remove excess water, leave none standing.

3.3 INSTALLATION - FORMWORK

A. Construct leak-proof forms anchored and shored to withstand grout pressures.

B. Install formwork with clearances to permit proper placement of grout.

3.4 MIXING

A. Mix and prepare non-shrink cementitious grout in accordance with manufacturer's instructions.
   1. Capable of developing minimum compressive strength of 2400 psi in 48 hours and 7000 psi in 28 days.

B. Mix grout components in proximity to work area and transport mixture quickly and in manner not permitting segregation of materials.

3.5 PLACING GROUT

A. Place grout material quickly and continuously.

B. Do not use pneumatic-pressure or dry-packing methods.

C. Apply grout from one side only to avoid entrapping air.

D. Do not vibrate placed grout mixture, or permit placement when area is being vibrated by nearby equipment.

E. Thoroughly compact final installation and eliminate air pockets.

F. Do not remove leveling shims for at least 48 hours after grout has been placed.

3.6 CURING

A. Immediately after placement, protect grout from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. After grout has attained its initial set, keep damp for minimum of 3 days.

3.7 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Field inspecting, testing, adjusting, and balancing.

B. Field inspection and testing will be performed in accordance with ACI 301 ACI 318 and under provisions of Section 01 40 00 - Quality Requirements.

C. Submit proposed mix design to testing firm for review prior to commencement of Work.

D. Tests of grout components may be performed to ensure conformance with specified requirements.

END OF DIVISION

DIVISION 5 METALS

SECTION 05 50 00

METAL FABRICATIONS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes shop fabricated metal items.

B. Related Sections:
1. Section 03 30 00 - Cast-In-Place Concrete: Execution requirements for embedded anchors and attachments for metal fabrications specified by this section in concrete.

1.2 REFERENCES

A. ASTM International:
1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
2. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
3. ASTM A276 - Standard Specification for Stainless Steel Bars and Shapes.
4. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
5. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
6. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
7. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts.
8. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
9. ASTM F436 - Standard Specification for Hardened Steel Washers.
10. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.

B. American Welding Society:
1. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.
2. AWS D1.1 - Structural Welding Code - Steel.

C. National Ornamental & Miscellaneous Metals Association:
1. NOMMA Guideline 1 - Joint Finishes.

D. SSPC: The Society for Protective Coatings:
1. SSPC - Steel Structures Painting Manual.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal requirements.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable. Indicate welded connections using standard AWS A2.0 welding symbols. Indicate net weld lengths.

C. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within previous 12 months.

1.4 QUALITY ASSURANCE

A. Finish joints in accordance with NOMMA Guideline 1.

1.5 QUALIFICATIONS

A. Design under direct supervision of Professional Engineer experienced in design of this Work and licensed at Project location.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Accept metal fabrications on site in labeled shipments. Inspect for damage.

C. Protect metal fabrications from damage by exposure to weather.

1.7 FIELD MEASUREMENTS

A. Verify field measurements are as indicated drawings.

PART 2 PRODUCTS

2.1 MATERIALS - STEEL

A. Structural Shapes: STM A36/A36M.

B. Steel Plate: ASTM A36/A36M.

C. Hollow Structural Sections: ASTM A500/A500M, Grade B.

D. Sheet Steel: ASTM A653/A653M, Grade 33 Structural Quality.

E. Bolts: ASTM A325; Type 1.
   1. Finish: Mechanically galvanized.

F. Nuts: ASTM A563 heavy hex type.
   1. Finish: Mechanically galvanized.

G. Washers: ASTM F436; Type 1.
   1. Finish: Mechanically galvanized.

H. Welding Materials: AWS D1.1; type required for materials being welded.

I. Shop Primer: SSPC Paint 15, Type 1, red oxide.

J. Touch-Up Primer: Match shop primer.

2.2 STRUCTURAL SUPPORTS

A. Other Structural Supports: Steel sections, shape and size as indicated on Drawings ; prime paint, one coat .

2.3 DOOR FRAMES

A. Door Frames: Steel channel sections, size indicated on Drawings, with jamb anchors suitable for building into masonry, attachment to concrete, and, minimum 4 anchors per jamb; prime paint, one coat

2.4 BOLLARDS

A. Bollards: Steel pipe, concrete filled, crowned cap, 6 in diameter, length as indicated on Drawings; prime paint, one coat

B. Concrete Fill: 3,000 psi as specified in Section 03 30 00 - Cast-in-Place Concrete

C. Anchors: Concealed type as indicated on Drawings

2.5 LADDERS

A. Ladder: ANSI A14.3, steel-welded construction.
   1. Side Rails: 1/2 x 2 inch side rails spaced at 24 inches apart.
   2. Rungs: 1 in diameter solid rod, spaced 12 in o.c.
   3. Mounting: Space rungs 7 in from wall surface; with steel mounting brackets and attachments
   4. Finish: Prime paint, one coat

2.6 FABRICATED ARCHITECTURAL TRIM

A. Steel sections, size and configuration as indicated on Drawings

B. Exterior Locations: Prime paint, one coat

2.7 ANCHORS

A. Anchor Rods: ASTM A307; Grade A
   1. Shape: Hooked and Straight
   2. Furnish with nut and washer; unfinished

B. Epoxy Adhesive Anchors:
   1. Manufacturer List:
      a. Cobra Anchors
      b. Hilti, Inc
      c. Simpson Strong-Tie Co., Inc
      d. Substitutions: Section 01 60 00 - Product Requirements

C. Grout: According to Section 03 60 00 - Grouting

D. Threaded Rod: As shown on the drawings or as approved by Architect

2.8 ANCHOR BOLTS

A. Anchor Rods: ASTM F1554; Grade 55, wieldable.
   1. Shape: Hooked.
   2. Furnish with nut and washer; unfinished.

2.9 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Continuously seal joined members by continuous welds.

D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.10 FACTORY APPLIED FINISHES - STEEL

A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.

B. Do not prime surfaces in direct contact with concrete or where field welding is required.

C. Prime paint items with two coats except where galvanizing is specified.

D. Galvanizing: ASTM A123/A123M; hot dip galvanize after fabrication.

E. Chrome Plating: ASTM B177, weight, nickel-chromium alloy, polished finish.

2.11 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 73 00 - Execution

B. Verify field conditions are acceptable and are ready to receive Work.

3.2 PREPARATION

A. Clean and strip primed steel items to bare metal and aluminum where site welding is required.

B. Supply steel items required to be cast into concrete or embedded in masonry with setting templates to appropriate sections.

3.3 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Make provisions for erection stresses. Install temporary bracing to maintain alignment, until permanent bracing and attachments are installed.

C. Field weld components indicated on Drawings.

D. Perform field welding in accordance with AWS D1.1.

E. Obtain approval of Architect/Engineer prior to site cutting or making adjustments not scheduled.

F. After erection, touch up welds, abrasions, and damaged finishes with prime paint or galvanizing repair paint to match shop finishes.

3.4 ERECTION TOLERANCES

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

B. Maximum Variation From Plumb: 1/4 inch per story or for every 12 ft in height whichever is greater, non-cumulative.

C. Maximum Offset From Alignment: 1/4 inch.

D. Maximum Out-of-Position: 1/4 inch.

3.5 FIELD QUALITY CONTROL

A. Welding: Inspect welds in accordance with AWS D1.1.

END OF DIVISION

DIVISION 6 WOOD, PLASTICS, AND COMPOSITES

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. Section includes structural wall and roof framing; built-up structural beams and columns; wall, and roof sheathing; sill gaskets; and miscellaneous framing and sheathing.

B. Related Sections:
1. Section 03 30 00: Cast-In-Place Concrete.
2. Section 06 10 53: Miscellaneous Rough Carpentry.

1.2 REFERENCES

A. American National Standards Institute:
1. ANSI A135.4 - Basic Hardboard.
2. ANSI A208.1 - Mat-Formed Wood Particleboard.

B. American Wood-Preservers' Association:
1. AWPA M4 - Standard for the Care of Preservative-Treated Wood Products.

C. AWPA ASTM International:
1. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
2. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

D. The Redwood Inspection Service:
1. RIS - Standard Specifications for Grades of California Redwood Lumber.

E. Southern Pine Inspection Bureau:
1. SPIB - Standard Grading Rules for Southern Pine Lumber.

F. U.S. Department of Commerce National Institute of Standards and Technology:
1. DOC PS 1 - Construction and Industrial Plywood.
2. DOC PS 2 - Performance Standard for Wood-Based Structural-Use Panels.
3. DOC PS 20 - American Softwood Lumber Standard.

G. West Coast Lumber Inspection Bureau:
1. WCLIB - Standard Grading Rules for West Coast Lumber.

H. Western Wood Products Association:
1. WWPA G-5 - Western Lumber Grading Rules.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
1. Lumber Grading Agency: Certified by DOC PS 20.
2. Lumber: DOC PS 2 Apply label from agency approved by authority having jurisdiction to identify each preservative treated material.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Protect trusses from warping or other distortion by stacking in vertical position, braced to resist movement.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

A. Lumber Grading Rules: NLGA RIS SPIB WCLIB WWPA or NELMA.

B. Beam Framing: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content.

C. Parallel Strand Lumber (PSL) – Weyerhaeuser 2.0E Parallam.

D. Joist Framing: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content.

E. Non-structural Light Framing: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content.

F. Studding: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content.

G. Miscellaneous Framing: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content, pressure preservative treat where required by code.

2.2 SHEATHING MATERIALS

A. Wood Structural Panel Roof Sheathing: EWA Rated Sheathing; Plywood Oriented Strand Board Span Rating as noted on structural drawings; Exposure Durability 1 exterior; unsanded.

B. Particleboard Roof Sheathing: ANSI A208.1 Waferboard Structural Particleboard; wood chips shavings flakes set with waterproof resin binder; grade as noted on structural drawings; unsanded faces.

C. Wood Structural Panel Wall Sheathing: EWA Rated Sheathing, Plywood Oriented Strand Board; Span Rating as noted on structural drawings; Exposure Durability 1 Exterior; unsanded.

D. Particleboard Wall Sheathing: ANSI A208.1 EWA Waferboard Structural Particleboard; wood chips, shavings, and flakes set with waterproof resin binder; grade as noted on structural drawings; unsanded faces.

2.3 SHEATHING AND UNDERLAYMENT LOCATIONS

A. Sloped Roof Sheathing: 19/32 inches thick; Span Rating: 40/20; 48 x 96 inch sized sheets, square edges.

B. Wall Sheathing: 7/16 inch thick, Span Rating 32/16, 48 x 96 inch sized sheets, square edges.

C. Floor Sheathing: 3/4 inch thick, Span Rating 40/20, 48 x 96 inch sized sheets, square edges.

D. Underlayment: 3/8 inch thick, type recommended by flooring manufacturer

2.4 FIREBLOCKING AND DRAFTSTOPPING

A. Fireblocking: Solid lumber, structural wood panel, or particleboard.
   1. Solid lumber nominal 2 inches thick.
   2. Two layers of solid lumber nominal 1 inch thick with broken lapped joints.
   3. Structural wood panel 23/32 inch thick with joints backed by structural wood panel.
   4. Particleboard 3/4 inch thick with joints backed by particleboard.

2.5 ACCESSORIES

A. Fasteners and Anchors:
   1. Fasteners: ASTM A153/A153M, hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
   2. Nails and Staples: ASTM F1667.
   3. Drywall Screws: Bugle head, hardened steel, power driven type, length to achieve full penetration of sheathing substrate.
   4. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.

B. Die Stamped Connectors: inch thick, hot dipped galvanized steel.

C. Structural Framing Connectors: Hot dipped galvanized steel, sized to suit framing conditions.

D. Sill Gasket on Top of Foundation Wall: 1/4 inch thick, plate width, glass fiber strip.

E. Subfloor Glue: EWA AFG-01, waterproof of water base, air cure type, and cartridge dispensed.

F. Building Paper: ASTM D226; Type I, No. 15 unperforated asphalt felt.

PART 3 EXECUTION

3.1 FRAMING

A. Set structural members level and plumb, in correct position.

B. Make provisions for erection loads, for sufficient temporary bracing to maintain structure safe, plumb, and in alignment until completion of erection and installation of permanent bracing.

C. Place horizontal members, crown side up.

D. Construct load bearing framing and curb members full length without splices.

E. Double members at openings over inches wide. Space short studs over and under opening to stud spacing.

F. Construct double joist headers at floor and ceiling openings and under wall stud partitions parallel to floor joists. Frame rigidly into joists.

G. Bridge joists at mid-span. Fit solid blocking at ends of members.

H. Place sill gasket directly on cementitious foundation. Puncture gasket clean and fit tight to protruding foundation anchor bolts.

I. Coordinate installation of glue laminated structural units, prefabricated wood trusses, and wood “I” joists.

J. Coordinate curb installation with installation of roof sheathing roofing and vapor retardant.

3.2 SHEATHING

A. Secure roof sheathing with longer edge (strength axis) perpendicular to framing members and with ends staggered and sheet ends over bearing.

B. Use sheathing clips between sheets between roof framing members. Install solid edge blocking between sheets.

C. Secure wall sheathing with long dimension perpendicular to wall studs, with ends over firm bearing and staggered. Place building air barrier over wall sheathing; weather lap edges and ends.

D. Install plywood to simple span.

3.3 FIREBLOCKING AND DRAFTSTOPPING

A. Install fireblocking to cut off concealed draft openings.
   1. Concealed Framed Wall and Furred Spaces: Install fireblocking vertically at floor and ceiling levels and horizontally at maximum 10 feet on center.
   2. Connections Between Horizontal and Vertical Spaces: Install fireblocking between vertical walls and partitions and the following:
      a. Horizontal roof framing.
      b. Soffits, dropped ceilings, cove ceilings and other horizontal concealed spaces.
   3. Exterior Combustible Architectural Trim: Install fireblocking at maximum 20 feet on center

3.4 TOLERANCES

A. Section 01 40 00 - Quality Requirements: Tolerances

B. Framing Members: 1/4 inch from indicated position, maximum.

C. Surface Flatness of Floor: 1/4 inch in 10 feet maximum, and 1/2 inch in 30 feet maximum.

END OF SECTION

SECTION 06 10 53

MISCELLANEOUS ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. Section includes perimeter nailers; blocking in wall and mobile home skirting; wood furring and grounds; wall cabinets, wood trim; telephone and electrical panel back boards; and concealed wood blocking for support.

1.2 REFERENCES

A. American National Standards Institute:
   1. ANSI A208.1 - Mat-Formed Wood Particleboard.

B. American Wood-Preservers' Association:
   1. AWPA M4 - Standard for the Care of Preservative-Treated Wood Products.

C. ASTM International:
   1. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   2. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

D. The Redwood Inspection Service:
   1. RIS - Standard Specifications for Grades of California Redwood Lumber.

E. Southern Pine Inspection Bureau:
   1. SPIB - Standard Grading Rules for Southern Pine Lumber.

F. U.S. Department of Commerce National Institute of Standards and Technology:
   1. DOC PS 1 - Construction and Industrial Plywood.
   2. DOC PS 20 - American Softwood Lumber Standard.

G. West Coast Lumber Inspection Bureau:
   1. WCLIB - Standard Grading Rules for West Coast Lumber.

H. Western Wood Products Association:
   1. WWPA G-5 - Western Lumber Grading Rules.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with the following:
   1. Lumber Grading Agency: Certified by DOC PS 20.
   2. Lumber: DOC PS 20.

PART 2 PRODUCTS

2.1 MATERIALS

A. Lumber Grading Rules: NLGA RIS SPIB WCLIB WWPA or NELMA.

B. Miscellaneous Framing: Douglas Fir - Larch grade, No 2 or better, 19 percent maximum moisture content.

C. Plywood: EWA Rated Sheathing; Plywood Oriented Strand Board Span Rating as noted on structural drawings; Exposure Durability 1 exterior; unsanded.

D. Particleboard: ANSI A208.1 Waferboard Structural Particleboard; wood chips shavings flakes set with waterproof resin binder; grade as noted on structural drawings; unsanded

faces.

2.2 ACCESSORIES

A. Fasteners and Anchors:
1. Fasteners: ASTM A153/A153M, hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
2. Nails and Staples: ASTM F1667.
3. Drywall Screws: Bugle head, hardened steel, power driven type, length to achieve full penetration of sheathing substrate.
4. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.

2.3 FACTORY WOOD TREATMENT

A. Wood Preservative (Pressure Treatment): AWPA U1, Commodity Specification A-Sawn Products or F-Wood Composites using water-borne preservative.

B. Wood Preservative (Surface Application): Clear, Fire Retardant Treatment: Chemically treated and pressure impregnated, having flame spread of 25 or less when tested in accordance with ASTM E 84 and showing no evidence of significant progressive combustion when test is continued for an additional 20 minute period, Interior Type.

C. Moisture Content after Treatment: Kiln dried (KDAT).
1. Lumber: Maximum 19 percent.
2. Structural Panels: Maximum 15 percent.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 31 00 – Project Management and Coordination: Verification of existing conditions before starting work.

B. Verify substrate conditions are ready to receive blocking, curbing and framing.

3.2 PREPARATION

A. Coordinate placement of blocking, curbing and framing items.

3.3 INSTALLATION

A. Set members level and plumb, in correct position.

B. Place horizontal members, crown side up.

C. Construct curb members of solid wood sections.

D. Curb roof openings except where prefabricated curbs are provided. Form corners by alternating lapping side members.

E. Coordinate curb installation with installation of decking and support of deck openings, and roofing vapor retardant.

F. Space framing and furring 16 inches oc.

G. Secure sheathing to framing members with ends over firm bearing and staggered.

H. Install telephone and electrical panel back boards with plywood sheathing material where required. Size back boards 12 inches beyond size of electrical and telephone panel.

END OF DIVISION

SECTION 06 20 13

EXTERIOR CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Exterior canopy components.
   2. Exterior standing and running trim.
   3. Exterior board and batten siding.
   4. Canopy posts

1.2 DEFINITIONS

A. Lumber grading agencies, and the abbreviations used to reference them, include the following:
   1. WWPA: Western Wood Products Association.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Protect materials against weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation. Provide for air circulation within and around stacks and under temporary coverings.

1.4 SUBMITTALS

A. Product Data: For each type of factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1.5 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit work to be performed and at least one coat of specified finish can be applied without exposure to rain, snow, or dampness.

B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.
   1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
   2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

1.6 MEASUREMENT AND PAYMENT

A. There will be no separate measurement or payment for work in this section. Payment will be included at the contract unit price for items shown on the Schedule of Items.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20 and applicable grading rules of inspection agencies certified by ALSC's Board of Review.
   1. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.

2. For exposed lumber, mark grade stamp on end or back of each piece.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process:

1. Lumber: AWPA C2 except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX). Kiln dry after treatment to a maximum moisture content of 19 percent.
2. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
3. For exposed items indicated to receive transparent finish, do not use chemical formulations that contain colorants or that bleed through or otherwise adversely affect finishes.
4. Do not use material that is warped or does not comply with requirements for untreated material.
5. Mark lumber with treatment quality mark of an inspection agency approved by ALSC's Board of Review.
   a. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.
6. Application: All exterior lumber and plywood.

2.3 STANDING AND RUNNING TRIM

A. Lumber Trim and board and batten siding for Opaque Finish:

1. Species and Grade: Redwood, Grade B; RIS.
2. Species and Grade: Western red cedar, Grade B; WWPA.
3. Species and Grade: Douglas Fir #2
4. Maximum Moisture Content: 19 percent.
5. Finger Jointing: Allowed if made with wet-use adhesive complying with ASTM D 5572.
6. Face Surface: Saw textured.

2.4 CANOPY POSTS:

A. Doug fir # 2 and Lodgepole Pine.

2.5 GUARDS AND RAILINGS

A. Posts, Railings and Balusters: Doug fir # 2 or Redwood, Grade B; RIS.

B. Doug fir # 2 or Redwood, Grade B; RIS.

2.6 MISCELLANEOUS MATERIALS

A. Fasteners for Exterior Finish Carpentry: Provide nails or screws, in sufficient length to penetrate not less than 1-1/2 inches into wood substrate.
   1. Provide hot-dip galvanized steel fasteners.
   2. For prefinished items, provide matching prefinished aluminum fasteners where face fastening is required.
   3. For pressure-preservative-treated wood, provide hot-dip galvanized steel fasteners.
   4. For applications not otherwise indicated, provide hot-dip galvanized steel fasteners.

B. Wood Glue: Waterproof resorcinol glue recommended by manufacturer for exterior carpentry use.

C. Sealants: Latex, complying with ASTM C 834, and recommended by manufacturer of substrates for intended application.
   1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
   2. Products: Subject to compliance with requirements, provide one of the following:
      a. Bostik Findley; Chem-Calk 600.
      b. Pecora Corporation; AC-20+.
      c. Schnee-Morehead, Inc.; SM 8200.
      d. Sonneborn, Division of ChemRex Inc.; Sonolac.
      e. Tremco; Tremflex 834.

2.7 FABRICATION

A. Back out or kerf backs of standing and running trim wider than 5 inches, except members with ends exposed in finished work.

B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

3.3 INSTALLATION, GENERAL

A. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.
   1. Do not use manufactured units with defective surfaces, sizes, or patterns.

B. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
   1. Scribe and cut exterior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
   2. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
   3. Install stairs with no more than 3/16-inch variation between adjacent treads and risers and with no more than 3/8-inch variation between largest and smallest treads and risers within each flight.
   4. Coordinate exterior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate exterior finish carpentry.

3.4 STANDING AND RUNNING TRIM INSTALLATION

A. Examine the condition of the existing trim with the Historic Preservation Specialist. If trim cannot be repaired, provide materials in shape and profile of existing trim.

B. Install flat grain lumber with bark side exposed to weather.

C. Install trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long except where necessary.
   1. Use scarf joints for end-to-end joints.
   2. Stagger end joints in adjacent and related members.

D. Fit exterior joints to exclude water. Cope at returns and miter at corners to produce tight-fitting joints with full-surface contact throughout length of joint. Plane backs of casings to provide uniform thickness across joints, where necessary for alignment.

E. Unless otherwise indicated, countersink fasteners, fill surface flush, and sand where face fastening is unavoidable.

3.5 ADJUSTING

A. Replace exterior finish carpentry that is damaged or does not comply with requirements. Exterior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

3.6 CLEANING

A. Clean exterior finish carpentry on exposed and semiexposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

3.7 PROTECTION

A. Protect installed products from damage from weather and other causes during construction.

B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.
   1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
   2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

Site and Infrastructure

DIVISION 31 EARTHWORK

SECTION 31 10 00

CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide removal of trees, stumps, shrubs, grass and other vegetation within the construction limits to permit construction of the new facilities.

B. Protect the adjoining properties from damage during clearing and grubbing operations.

PART 2 - PRODUCTS NOT USED

PART 3 - EXECUTION

3.1 CLEARING AND GRUBBING

A. Clearing and grubbing shall extend to no more than 3 feet outside of the construction limits. The clearing and grubbing operation shall be conducted in a manner which will not damage any vegetation outside of the clearing and grubbing limits. All brush, roots, and other debris within the grubbing limits shall be removed to a depth of 6". Completely remove stumps and other debris protruding through the subgrade surface. The Contractor shall chop all brush and debris resulting from the Clearing and Grubbing operation and haul to a disposal site located by the Contractor off-site. Burning of debris on-site will not be allowed.

3.2 STRIPPING

A. Areas within the limits of the project shall be stripped to remove topsoil containing organic material before construction begins over such areas. The topsoil shall not be used in construction of onsite fills or trench backfills. The topsoil shall be hauled to a disposal site located by the Contractor off-site.

END OF SECTION

SECTION 31 20 00

EARTHWORK

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide all labor, materials, and equipment as required for all excavation, grading, providing borrow materials, hauling, placing and compacting earthwork materials to construct the site to the grades shown on the plans. This only includes earthwork for the site/civil portion of the project, not construction of the building.

B. Prior to commencement of any earthwork, the Contractor shall review the geotechnical reports. The geotechnical report will be available from the architect prior to commencement of work for information only and the Contractor is responsible for making any interpretations there from.

C. Submit to the Engineer's Field Representative load tickets on all materials delivered to the site.

1.2 REFERENCE STANDARDS

A.	ASTM D 136	Sieve Analysis of Fine and Coarse Aggregates
B.	ASTM D 422	Method for Particle - Size Analysis of Soils
C.	ASTM D 698	Test Methods for Moisture-Density Relations of Soils and Soil-Aggregated Mixtures, Using 5.5-lb Rammer and 12 inch Drop
D.	ASTM D 1556	Density of Soil by the Sand-Cone Method
E.	ASTM D 1557	Test Methods for Moisture-Density Relations of Soils and Soil Aggregate Mixtures, Using 10 lb. Rammer and 10 inch Drop
F.	ASTM D 1633	Test Method for Compressive Strength of Molded Soil-Cement Cylinders
G.	ASTM D 2419	Test Method for Sand Equivalent Value of Soils and Fine Aggregate
H.	ASTM D 2487	Classification of Soils for Engineering Purposes
I.	ASTM D 2901	Test Method for Cement Control of Freshly-Mixed Soil Cement
J.	ASTM D 2922	Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).

K. ASTM D 4254 Test Methods for Minimum Index Density of Soils and Calculative of Relative Density

L. OSHA - 1926.650-651 and other applicable sections.

1.3 SUBMITTALS

A. The Contractor shall submit test results of all materials proposed to be used in work in accordance with the requirements of Section 01 33 00 – Submittal Procedures.

B. Submit sieve analysis, moisture density relationship test for both ASTM D698 and D1557, and sand equivalency. The sieve analysis and moisture density relationship tests must have been completed within 12 calendar months from the date of submittal.

1.4 DEFINITIONS

A. Backfill or Fill:(a) Material used to replace material removed during construction or (b) The act of replacing or placing material during construction.

B. Backfill Operation or Fill Operation: The method and the activity required to fill surface depressions and excavations, or to construct fills to required grades.

C. Common Fill: Fill or borrow materials which are naturally occurring and not meeting a specific gradation or classification.

D. Structural Fill: The act of placing common or imported fill material under controlled operation to a certain density.

PART 2 - PRODUCTS

2.1 SUITABLE FILL AND BACKFILL MATERIAL REQUIREMENTS

A. The following types of suitable materials are defined (see Execution for the location where the materials are approved for use or where identified in other specifications and drawings):

1. Common Fill: Fill or borrow materials which are naturally occurring, not meeting a specific gradation or classification, are not Unsuitable Materials, and can be placed in a controlled operation to a certain density.

2. Sand Backfill (Bedding Sand): Sand with 100 percent passing a 3/8 inch sieve, at least 90 percent passing a Number 4 sieve and less than 3% passing the No. 200 sieve.

3. Crushed Stone Backfill (Bedding Chips): Manufactured angular, crushed stone, crushed rock, or crushed slag with the following gradation requirements:

Sieve Size	Percent Passing By Weight
1”	100

Sieve Size	Percent Passing By Weight
3/4"	80 - 100
3/8”	20 - 70
No. 4	5 - 20
No. 200	0 - 3

4. Foundation Stabilization Backfill: Uncrushed gravel, and sand with the gradation requirements below. The material shall have a minimum sand equivalent value of 28, sand equivalent not required if less than 5% passing the No. 200 sieve.

Sieve Size	Percent Passing By Weight
3”	100
No. 4	25 - 60
No. 200	0 - 12

5. Fine Gravel Drain Rock: Clean crushed rock or gravel which is free of shale, clay, friable materials, and or debris that conforms to the gradation below.

Sieve Size	Percent Passing By Weight
1 1/2”	100
1”	25 - 70
3/4”	5 - 15
3/8”	0 - 4
200	0 - 2

6. Coarse Gravel Drain Rock: Crushed rock or gravel which is free of shale, clay, friable materials, and or debris that conforms to the gradation below. Drain Rock shall have a minimum of 35% Air Voids as determined by ASTM C 29 Standard Test Method for Unit Weight and Voids in aggregate, Jigging Procedure.

Sieve Size	Percent Passing By Weight
3”	100
1”	25 - 60
3/8”	0 - 4
200	0 - 2

7. Aggregate Base (3/4” Road Mix): Crushed aggregate base material of such nature that it can be compacted readily by watering and rolling to form a firm, stable base. The material shall meet the following gradation requirements:

Sieve Size	Percent Passing By Weight

Sieve Size	Percent Passing By Weight
1”	100
3/4"	90 - 100
No. 4	40 - 65
No. 8	30 - 50
No. 200	3 - 9

a. The sand equivalent value shall be not less than 30, sand equivalent not required if less than 5% passing the No. 200 sieve

b. The material shall have a Los Angeles Abrasion of 35% or less.

8. Aggregate Subbase (Pit Run): Uncrushed rock aggregate subbase material that can be compacted readily by watering and rolling to form a firm stable subbase. The material shall meet the following requirements:

Sieve Size	Percent Passing By Weight
4”	100
3”	90-100
No. 4	30-75
No. 200	0 – 15.0

a. The sand equivalent value shall be not less than 30, sand equivalent not required if less than 5% passing the No. 200 sieve.

b. The material shall have a Los Angeles Abrasion of 40% or less.

9. Imported Trench Backfill (8” Pit Run): Uncrushed rock aggregate material that can be compacted readily by watering and rolling to form a firm stable trench. The sand equivalent value shall be not less than 25, sand equivalent not required if less than 5% passing the No. 200 sieve, and the material shall meet the following requirements:

Sieve Size	Percent Passing By Weight
8”	100
No. 4	15 - 60
No. 200	0 - 12

10. Granular Borrow: Provide sand, sand and gravel, or sand and rock mixtures with a sand equivalent greater than 30. Sand equivalent is not required if the material has less than 5 percent passing the No. 200 sieve.

11. Trench Plug Material: Low permeable fill material, a non-dispersible clay material having a minimum plasticity index of 10.

12. Top Soil: Excavated material, up to 18 inches below stripped surface, free of rocks larger than 3 inches, organics, roots, refuse, brush or other debris.

13. Rip Rap: Riprap material shall be hard, durable, angular in shape and free from overburden and organic material. The breadth or thickness of any stone shall not be less than one-third of its length. The minimum unit weight of the stone shall be 165 pounds per cubic foot. Riprap material shall have less than 10 percent loss after five cycles in the sulfate soundness tests and shall conform to the following gradation:

Weight of Stones	Percent of Total Weight Less than the Stone Weight
200 lbs	100
130 lbs	80
90 lbs	50
25 lbs	10 max.

14. Gravel Surfacing: Meet the following requirements for gravel surfacing, including added binder or blending material:

Sieve Size	Percent Passing By Weight
3/4"	100
No. 4	40-80
No. 10	25-60
No. 200	8-20

a. Dust Ratio: the portion passing the No. 200 (0.075 mm) sieve cannot exceed two-thirds of the portion passing the No. 40 (0.425 mm) sieve.

b. For material passing the No. 40 (0.425 mm) sieve, the liquid limit must not exceed 35 and the plasticity index must not be below 6 or above 12.

c. A wear factor not exceeding 40% at 500 revolutions.

d. At least 35% by weight of the aggregate retained on the No. 4 (4.75 mm) sieve must have one fractured face.

15. RAP Surfacing: Unprocessed Recycled Asphalt Pavement (RAP) that has not been processed for gradation and binder content uniformity. RAP stockpile may be from different sources of unprocessed RAP together provided it is generally free of contamination from dirt, debris, clean stone, concrete, etc. Provide unprocessed RAP that has 100 percent passing the 5/8-inch sieve.

16. Filter Sand: Aggregate of natural sand or other approved inert materials composed of hard, strong, and durable particles conforming to the requirements of ASTM C-33 except as modified herein.

a. Use only aggregates that include deleterious substances not exceeding the following:

Type	Percent Passing By Weight
Clay Lumps	0.50
Coal and Lignite	0.30
Other Deleterious Substances	2.00
Deleterious Material passing No. 200	1.75

b. Moisture content of fine aggregate shall not exceed 8 percent.

c. Aggregate that is uniformly graded from coarse to fine within the following gradation as follows:

Sieve Size	Percent Passing By Weight
3/8”	100
No. 4	95 - 100
No. 16	45 - 80
No. 50	10 - 30
No. 100	2 - 10
No. 200	0 - 4

2.2 UNSUITABLE MATERIALS

A. Unsuitable material include the materials listed below:

1. Soils which, when classified under ASTM D 2487 – Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System), fall in the classification of Pt, OH, CH, MH, or OL.

2. Soils which cannot be compacted sufficiently to achieve the density specified for the intended use.

3. Materials that contain hazardous or designated waste materials including petroleum hydrocarbons, pesticides, heavy metals, and any material which may be classified as hazardous or toxic according to applicable regulations.

4. Soils that contain greater concentrations of chloride or sulfate irons, or have a soil resistively or pH less than the existing on-site soils.

PART 3 - EXECUTION

3.1 PREPARATION

A. Notify Engineer prior to starting any grading operations.

B. Identify required lines, levels, contours and datum.

C. Identify and flag surface and aerial utilities, known underground utilities locations.

D. Maintain and protect existing utilities which pass through the work area.

3.2 SITE CONTROL

A. Unfavorable Weather: Do not place, spread, or roll any fill material during unfavorable weather conditions. Do not resume operations until moisture content of material is satisfactory.

B. Flooding: Provide berms or channels to prevent flooding or saturation of subgrade. Promptly remove all water collecting in depressions.

C. Softened Subgrade: Where soil has been softened or eroded by flooding or placement during unfavorable weather, remove all damaged areas and recompact as specified for fill.

D. Dust Control: Use all means necessary to control dust on and near the work and on and near all off-site borrow areas. Thoroughly moisten all surfaces as required to prevent dust from being a nuisance to the public, neighbors, residents, properties, and concurrent performance of other work on the site.

E. Noise Control: Use equipment that is equipped with adequate noise attenuation devices.

3.3 OFF-SITE IMPACTS

A. Comply with all traffic and hauling requirements of the State and County.

B. Provide all signing, flagmen, or other special traffic control required to provide for the safety of the public.

C. Use only vehicles approved for highway use and comply with all load requirements.

D. Provide wheel cleaning as required to minimize the tracking of materials onto public roadways.

3.4 PROTECTION

A. Protect trees and other features to remain as a portion of the final landscaping or project.

B. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from equipment and vehicular traffic.

C. Protect above and below grade utilities which are to remain.

D. Notify Engineer of unexpected subsurface conditions and discontinue affected work in the area until notified to resume work.

E. Protect bottom of excavations and soil adjacent to and beneath foundation from frost.

F. Grade excavation top perimeter to prevent surface water runoff into excavation.

3.5 EXCAVATION

A. Excavate all cut areas to the grades shown on the plans.

B. Excavate all areas that have excessive moisture content and cannot be compacted to the required densities.

C. Correct unauthorized excavation at no cost to the Owner.

D. Excavate or scarify and aerate soils with excessive moisture content, and allow to dry.

3.6 SUBGRADE PREPARATION

A. Pavement & Concrete

1. Excavate to expose competent native soils or to a minimum of 2 ft below finished subgrade. If fill materials remain after over-excavation, the exposed subgrade must be compacted.

3.7 PREPARATION OF FOUNDATIONS

A. Retaining Wall Footings:

1. Per Geotechnical Report.

3.8 CONSTRUCTION OF EMBANKMENTS

A. Fill areas to contours and elevations as shown on the plans. Do not use frozen materials.

B. Place and compact fill materials in continuous lifts not exceeding six (6) inches in depth for silty soils or twelve (12) inches for granular structural fill materials, unless specifically allowed.

C. Employ a placement method so as not to disturb or damage utilities in trenches.

D. Maintain optimum moisture content of materials to attain required compaction density.

E. Make smooth changes in grade. Blend slopes into level areas.

3.9 IMPORTED STRUCTURAL FILL

A. Aggregate Subbase and Base, granular borrow, and common fill material under parking areas, drive lanes, and vehicle traffic areas, shall be compacted to at least 95% of the maximum dry density as determined in accordance with ASTM D698. Maximum loose lift thickness for aggregate base shall not exceed 8 inches. Maximum loose lift thickness for aggregate subbase, granular borrow, and common fill shall not exceed 10 inches.

B. Granular material with more than 30% by weight retained on the 3/4-inch sieve shall be compacted to a minimum 75% of maximum index density as determined by ASTM D4253 and D4254. Drain rock and crushed stone backfill material does not require compaction.

3.10 DISPOSAL OF WASTE SOIL

A. Contractor shall dispose of waste material at an off-site location determined by the Contractor.

3.11 QUALITY CONTROL

A. Material & Compaction Testing: All soils testing of samples will be done by an independent testing laboratory mutually agreed upon by Contractor and Owner at the Owner's expense. If tests indicate work does not meet specific compaction requirements, remove work, replace, and retest at the Contractor's expense.

1. Qualifications of testing company

a. Basic requirements of ASTM E 329, "Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials as Used in Construction" and ASTM D 3666, "Standard Specification for Minimum Requirements for Agency Testing and Inspecting Bituminous Paving Materials", as applicable.

b. Calibrate testing equipment at reasonable intervals by devices of accuracy traceable to either the National Bureau of Standards or accepted values of natural physical constants.

2. Frequency of Compaction Tests

a. Curbs and sidewalks: In horizontal plane, test at start with subsequent tests a maximum of every 250 feet. At landscape islands test each island at one location. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change. Perform a minimum of two (2) tests at finished grade.

b. Parking and vehicle areas, roadways: In horizontal plane, test each backfill area with subsequent test for every 2,500 square feet of backfill surface area. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change.

c. Concrete slabs for patios, concrete plaza, and entry slabs: In horizontal plane, test each backfill area with subsequent test for every 1,000 square feet of backfill surface area. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change.

d. Linear foundations and footings for retaining walls: In horizontal plane, test at start with subsequent tests a maximum of every 100 feet, and where elevation changes between adjacent footings. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change. Perform a minimum of two (2) tests at finished grade.

e. Along retaining walls: In horizontal plane, test each backfill area with subsequent test for every 100 lineal feet of wall, a minimum of two test per exterior wall side. At every horizontal location, obtain one test at subgrade. Perform subsequent tests every 12 inches of compacted depth and at top of backfill or when materials or procedures change.

3.12 TOLERANCES

A. Finished grade of graded areas shall meet the following requirements:

1. In paved areas including roadways, sidewalks, parking lots, etc., plus or minus 0.10 feet from the grade shown on the plans.

2. Concrete pads, plus or minus 0.05 feet from the grade shown on the plans.

3. In landscaped areas or similar areas, plus or minus two (2) inches.

4. Differential grades between walking surfaces shall not exceed 1/4-inch.

5. Landscape finish grade adjacent to concrete walks shall be minus 1-inch from walking surface elevation.

END OF SECTION

SECTION 31 20 15

TRENCHING AND BACKFILL

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide all excavation of trenches, bedding, and backfilling work for construction of piping.

B. Excavation of trenches shall include all material excavated or removed regardless of type, character, composition or condition of the material.

1.2 SUBMITTALS

A. The Contractor shall submit samples of all materials proposed to be used in work. Sample sizes shall be determined by the testing laboratory.

1.3 DEFINITIONS

A. Pipe Zone: That portion of the vertical trench cross-section lying between a plane below the bottom surface of the pipe and a plane 6 inches above the top of the pipe.

B. Trench Zone: The portion of the vertical trench cross-section lying between the Pipe Zone and a point 18 inches below the finished grade.

C. Final Backfill: The portion of the vertical trench cross-section within 18 inches of finished grade.

D. Pipe Bedding: Material placed below the pipe and in the Pipe Zone.

E. Springline: The center axis of the pipe.

F. Trench Backfill: Material placed from the top of the Pipe Zone to finished grade.

G. Trench Foundation Material: Material placed below the Pipe Bedding.

PART 2 - PRODUCTS

2.1 PIPE BEDDING MATERIAL

A. Pipe bedding shall consist of crushed stone backfill (bedding chips) material per Section 31 20 00 – Earthwork.

2.2 TRENCH BACKFILL MATERIAL

A. Excavated trench material may be used as follows:

1. Excavated trench material shall be free from cinders, ashes, refuse, organic and frozen material, boulders with any dimension exceeding 8 inches, or other unsuitable material per Section 31 20 00 – Earthwork.

2. Material with excessive or deficient moisture content will not be considered as unsuitable if the moisture content can be adjusted to a level that allows obtaining compaction.

3. Imported backfill material shall conform to imported trench backfill (8" Pit Run) per Section 31 20 00 – Earthwork.

2.3 FOUNDATION STABILIZATION

A. Trench foundation material shall consist of foundation stabilization backfill material per Section 31 20 00 – Earthwork.

2.4 IDENTIFICATION TAPE AND LOCATING WIRE

A. Locating wire shall be No. 12 AWG insulated cooper locating wire with 1/64" PVC insulation.

B. Identification tape shall be 3-inches wide, 4 mil polyethylene vinyl. Tape text and color shall meet the following requirements

Pipe Contents	Text	Color
Potable Water	"CAUTION – WATER LINE BURIED BELOW"	Blue
Pressure Sewer	"CAUTION – SEWER LINE BURIED BELOW"	Green
Reclaimed Water	"CAUTION – RECLAIMED WATER LINE BURIED BELOW"	Purple
Pressure Irrigation	"CAUTION – IRRIGATION LINE BURIED BELOW"	Purple
Gas	"CAUTION – GAS LINE BURIED BELOW"	Yellow
Telephone	"CAUTION – PIPE LINE BURIED BELOW"	Yellow
Cable TV	"CAUTION – PIPE LINE BURIED BELOW"	Yellow
Electric	"CAUTION – ELECTRICAL LINE BURIED BELOW"	Red

PART 3 - EXECUTION

3.1 EXISTING UTILITIES:

A. The Contractor shall be fully responsible for any and all damage to existing or constructed utilities, and shall repair damages in accordance with utility owner's requirements at no additional cost to the Owner. It shall be the Contractor's responsibility to coordinate and notify all affected utility owners. Call 811 Dig-Line before commencing construction.

1. Parallel Utility Support: Work associated with parallel utility support and utility crossings shall be incidental to the work unless a specific bid items is provided for parallel utility support.

2. Utility Crossing Support: All utilities that interfere with the construction of the trenching and pipe installation shall be temporarily supported in accordance with the utility owner's requirements. Work associated with utility crossings support shall be incidental to the work unless a specific bid items is provided for utility crossing support.

3. All crossing utilities shown on the plans and marked by Dig-Line shall be vertical and horizontally located, in a non-destructive manner, prior to construction to verify pipe elevation, materials, and diameter. This information shall be provided to the Engineer for evaluation of conflicts prior to construction. All potholes shall be backfilled immediately after obtaining information.

3.2 TRENCH EXCAVATION

A. Trenches shall be excavated to lines and grades shown on the drawings, with a minimum width at the top or crown of the pipe not to exceed the outside diameter of the pipe plus 2'. In the event the Contractor should over excavate in width or depth without the Engineer's approval, he shall provide pipe bedding for the full length of the over excavation. No special payment will be made for work caused by over excavation.

B. Trench shall be kept free from water at all times to facilitate fine grading, proper laying and joining of pipe, and prevention of damage to completed joints.

C. If the trench bottom is disturbed during excavation, compact trench bottom to 95% maximum density of the standard proctor, ASTM D698.

D. The Contractor shall conduct trench operations in such a manner as to provide adequate safety precautions for workmen, adjacent property, or the public at all times by use of adequate sheeting, shoring, or bracing to sustain stability of the trench floor and walls. The Contractor shall furnish, place, and maintain such shoring as may be required to support sides of the trench. Costs of shoring and bracing shall be considered incidental to trench excavation and backfill.

E. The Contractor shall conduct trench operations in such a manner as to provide adequate safety precautions for workmen, adjacent property, or the public at all times by use of adequate sheeting, shoring, or bracing to sustain stability of the trench floor and walls. The Contractor shall furnish, place, and maintain such shoring as may be required to support sides of the trench.

3.3 PIPE BEDDING

A. Place bedding in layers no thicker than 6 inches. Allow for bedding depth around pipe bells. Place bedding at least 4 inches below the pipe and 6 inches above the pipe.

B. Shovel slice and tamp to ensure that the bedding material is firmly placed.

C. Following placement of pipe, place additional bedding material up to the springline of the pipe. Shovel slice and tamp to ensure that the bedding material fills in and supports the pipe haunch area.

D. In 6 inch lifts, place additional bedding layers from the pipe springline to 6 inches above the pipe.

3.4 TRENCH BACKFILL

A. All backfill material shall be placed in layers not to exceed 6-inch maximum loose lift thickness for native silty material and 12-inch maximum loose lift thickness for imported aggregate backfill.

B. The entire trench shall be compacted to 95% maximum density of the standard proctor as determined by ASTM D-698.

C. Trenches under buildings and structures shall be compacted, the entire depth, to 95% maximum density of the modified proctor determined by ASTM D1557.

3.5 IDENTIFICATION TAPE AND LOCATING WIRE PLACEMENT

A. Unless indicated otherwise, attach locating wire to the crown of all buried pipelines using electrical tape, except gravity irrigation, sanitary sewer, or storm sewer mains having visible manholes or clean-out structures at all angle points. Provide 12” of slack wire above ground at each location of valve or wire box.

B. Unless indicated otherwise, identification tape shall be placed above all buried pipelines, 18” - 24” above the crown of the pipe, except gravity irrigation, sanitary sewer, or storm sewer mains having visible manholes or clean-out structures at all angle points.

C. Unless indicated otherwise, identification tape shall be placed above all buried pipelines that are installed with locating wire. Identification tape shall be placed 18” - 24” above the crown of the pipe.

3.6 QUALITY CONTROL

A. Material & Compaction Testing: All soils testing of samples will be done by a testing laboratory mutually agreed upon by Contractor and Owner at the Owner’s expense. If tests indicate work does not meet specific compaction requirements, remove work, replace, and retest at the Contractor’s expense.

1. Qualifications of testing company

a. Basic requirements of ASTM E 329, “Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials as Used in Construction” and ASTM D 3666, “Standard Specification for Minimum Requirements for Agency Testing and Inspecting Bituminous Paving Materials”, as applicable.

b. Calibrate testing equipment at reasonable intervals by devices of accuracy traceable to either the National Bureau of Standards or accepted values of natural physical constants.

2. Frequency of Compaction Tests

a. Test Section shall be a test at 2-feet above top of pipe and every 1-foot lift thereafter and at the top of the trench backfill.

b. Two (2) test sections, at different locations for every trench less than 300 feet in length, but not less than once per day.

c. One (1) test section per every 300 feet of additional trench and at locations where materials or construction procedures change, but not less than once per day.

3.7 CLEANUP

A. Surplus excavated material or stripped material not salvaged as topsoil and excavated material not meeting the requirements for backfill shall become waste. All waste material shall be disposed of by the Contractor.

END OF DIVISION

DIVISION 32 EXTERIOR IMPROVEMENTS

SECTION 32 13 13

SITE CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Walks.
2. Curbs, Gutters, Valley Gutters.
3. Site Concrete Pavement.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
2. Samples for initial selection for admixture requiring color selection.

1.3 QUALITY ASSURANCE

A. Perform work in accordance with ACI 301 requirements and State of Idaho Public Works Standards, Section 700.

B. Obtain cementitious materials from same source throughout.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:

1. Portland Cement: ASTM C 150, AASHTO M 85, Type I or II Portland cement.

a. Fly Ash: Per ITD standard Specifications for highway construction, Section 714.
b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

B. Fine and Coarse Mix Aggregates: ASTM C 33

1. Maximum size aggregate shall be 3/4 inch for slabs-on-grade, sidewalks, curbs, gutters, and catch basins.

2. Fine aggregate shall be clean, hard, strong, durable natural mineral particles free of chemicals or other coatings that would affect bonding of the cement paste.

C. Water: Potable and complying with ASTM C 94/C 94M.

D. Air-Entraining Admixture: ASTM C 260.

E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. ASTM C 494, Type A - Water Reducing.

2.2 CURING MATERIALS

A. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class A, dissipating.

2.3 RELATED MATERIALS

A. Joint Fillers:

1. Type “A” ASTM D1751 type; 1/2 thick. Fiber Joint Filler. Provide resilient and non-extruding type premolded bituminous-impregnated fiberboard units complying with ASTM D175.
2. Type “B” - Equal to “Strip Joint” as manufactured by A.C. Horn, Inc., 12116 Conway Rd., Beltsville, MD 20705 (800) 654-0402. Reference Section 07 90 00 for sealant type.

2.4 CONCRETE MIXTURES - BY PERFORMANCE CRITERIA

A. Select proportions for normal weight concrete in accordance with ACI 301 Method 1.

B. Provide concrete to the following criteria:

1. Compressive Strength: 2000 psi @ 7 days.
2. Compressive Strength: 4000 psi @ 28 days.
3. Slump: 1 to 3 inches in accordance with UBC Standard 19-7.
4. Entrained Air: 6% plus or minus 1 1/2%.
5. Portland Cement: Type I or II.

C. Use accelerating admixtures in cold weather only when approved by Architect. Use of admixtures will not relax cold weather placement requirements.

D. Do not use calcium chloride.

E. Use set retarding admixtures during hot weather only when approved by Architect.

2.5 CONCRETE MIXING

A. Ready-Mixed Concrete: Mix concrete in accordance with ACI 304.

B. Furnish batch certificates for each batch discharged and used in the Work.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Verify compacted, granular base is acceptable and ready to support paving and imposed loads.

B. Section 31 20 00 – Earthwork forms the base construction for work of this Section

C. Verify gradients and elevations of base are correct.

D. Moisten base to minimize absorption of water from fresh concrete.

E. Coat surfaces catch basin frames with oil to prevent bond with concrete pavement.

F. Notify Architect a minimum of 24 hours prior to commencement of concreting operations.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Place joint filler vertical in position, in straight lines. Secure to form work during concrete placement.

C. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.3 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.

B. Place contraction joints on sidewalk, mow strips and curbs at curves, tangents and corners, unless shown differently on drawings. Align curb, gutter, and sidewalk joints.

C. Place isolation / expansion joints at locations where concrete pavement and sidewalk interface a foundation or other structure. Joints shall be sealed using polyurethane sealant FS-TT-S-00227, Type II non-sag, Class A sealant.

D. Provide scored joints at 6 feet intervals unless shown differently on drawing. Align curb, gutter and sidewalks joints.

E. Scored joints shall be 1/3 (one-quarter) the depth of the slab.

F. Edging:

1. After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/2-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.4 CONCRETE PLACEMENT

A. Moisten subbase to provide a uniform dampened condition at time concrete is placed.

B. Comply with ACI 301 requirements for measuring, mixing, transporting, placing, and consolidating concrete.

C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

D. Screed paving surface with a straightedge and strike off.

E. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.5 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared, and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture.

3.6 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection. Use of accelerating admixtures allowed in cold weather only when approved by Architect.

C. Evaporation Retarder: Apply evaporation retarder (only when approved by Architect) to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by curing compound on exposed concrete surfaces immediately after finishing.

3.7 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows – The more restrictive tolerance shall control in event that the specification tolerances conflict with tolerances noted on the plans:

1. Elevation: 1/8 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/4 inch.
4. Joint Spacing: 3 inches.
5. Contraction Joint Depth: Plus 1/4 inch, no minus.
6. Joint Width: Plus 1/16 inch, no minus.
7. See plans for concrete horizontal and vertical tolerances.

3.8 REPAIRS AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Contractor shall engage a qualified testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement.

B. Testing Services: Testing shall be performed according to the following requirements of as modified by the project geotechnical engineer:

1. Sampling Fresh Concrete: Representative samples of fresh concrete shall be obtained according to ASTM C 172, except modified for slump to comply with ASTM C 94.
2. Slump: ASTM C 143; one test at point of placement for each compressive-strength test, but not less than one test for every 20 c.y. of each type of concrete. Additional tests will be required when concrete consistency changes.
3. Air Content: ASTM C 231, pressure method; one test for each compressive-strength test, but not less than one test for each day's pour of each type of air-entrained concrete.
4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each set of compressive-strength specimens.
5. Compression Test Specimens: ASTM C 31/C 31M; one set of four standard cylinders for each compressive-strength test, unless otherwise indicated. Cylinders shall be molded and stored for laboratory-cured test specimens unless field-cured test specimens are required.
6. Compressive-Strength Tests: ASTM C 39; one set for each day's pour of each concrete class exceeding 5 cu. yd., but less than 20 cu. yd., plus one set for each additional 20 cu. yd. One specimen shall be tested at 7 days and two specimens at 28 days; one specimen shall be retained in reserve for later testing if required.
7. When frequency of testing will provide fewer than five compressive-strength tests for a given class of concrete, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
8. When total quantity of a given class of concrete is less than 20 cu. yd., Architect may waive compressive-strength testing if adequate evidence of satisfactory strength is provided.

9. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, current operations shall be evaluated and corrective procedures shall be provided for protecting and curing in-place concrete.
10. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive compressive-strength test results equal or exceed specified compressive strength and no individual compressive-strength test result falls below specified compressive strength by more than 500 psi.

C. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 24 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing agency, concrete type and class, location of concrete batch in pavement, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

D. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as the sole basis for approval or rejection.

E. Additional Tests: Testing agency shall make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Architect. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

END OF DIVISION

ITD D4 STANLEY

HUD Manufactured Home and Site Design

STANLEY, ID

ABBREVIATIONS

ACPS	ACOUSTIC CEILING PANEL SYSTEM	HVAC	HEATING, VENTING & AIR CONDITIONING
AC	AIR CONDITIONING	INSUL	INSULATION
ADJ	ADJUSTABLE	INT	INTERIOR
AFF	ABOVE FINISH FLOOR	LAM	LAMINATED
ALT	ALTERNATE	LOC	LOCATION
ALUM	ALUMINUM	LRG	LARGE
AV	AUDIO/ VISUAL	MAS	MASONRY
BRD	BOARD	MAX	MAXIMUM
BLDG	BUILDING	MECH	MECHANICAL
BTM	BOTTOM	MTL	METAL
CAB	CABINET	MANUF	MANUFACTURER
CG	CORNER GUARD	MHU	MANUFACTURED HOME UNIT
CJ	CONTROL JOINT	MIN	MINIMUM
CLG	CEILING	MISC	MISCELLANEOUS
CLR	CLEAR	NA	NOT APPLICABLE
CMU	CONCRETE MASONRY UNIT	NO	NUMBER
COL	COLUMN	NOM	NOMINAL
CONC	CONCRETE	NTS	NOT TO SCALE
CONN	CONNECTION	OC or ℄	ON CENTER OR CENTER LINE
CONT	CONTINUOUS	OFCI	OWNER FURNISHED - CONTRACTOR INSTALLED
DEMO	DEMOLITION	PT	PRESSURE TREATED
DTL	DETAIL	PART BRD	PARTICLE BOARD
DF	DRINKING FOUNTAIN	PLAN	PLASTIC LAMINATE
DIA	DIAMETER	PEJ	PETROLEUM EXPANSION JOINT
DIM	DIMENSION	PLY	PLYWOOD
DISP	DISPENSER	PRE-FIN	PRE-FINISHED
DR	DOOR	PWR	POWER
DWG	DRAWING	RCP	REFLECTED CEILING PLAN
DWR	DRAWER	RD	ROOF DRAIN
EA	EACH	REF	REFERENCE
EF	EXHAUST FAN	REINF	REINFORCEMENT
EIFS	EXT. INSUL. & FIN. SYSTEM	REQ	REQUIRED
EJ	EXPANSION JOINT	RM	ROOM
ELEC	ELECTRICAL	SHT	SHEET
EMER	EMERGENCY	SHTG	SHEATHING
EQ	EQUAL	SIM	SIMILAR
EQUIP	EQUIPMENT	SPEC	SPECIFICATIONS
ETR	EXISTING TO REMAIN	SQ	SQUARE
EXP	EXPOSED	SAN	SANITARY SEWER
EXPAN	EXPANSION	SS	SOLID SURFACE
EXT	EXTERIOR	SST	STAINLESS STEEL
FD	FLOOR DRAIN	STL	STEEL
FE	FIRE EXTINGUISHER	STOR	STORAGE
FEC	FIRE EXTINGUISHER CABINET	STRUCT	STRUCTURAL
FF	FINISH FLOOR	SUSP	SUSPENDED
FG	FINISH GRADE	TEMP	TEMPERATURE
FLR	FLOOR (ING)	TERM	TERMINATION
FTG	FOOTING	TOF	TOP OF FOOTING
GA	GAUGE	TOB	TOP OF BEARING
GALV	GALVANIZED	TYP	TYPICAL
GL	GLASS	VERT	VERTICAL
HC	HOLLOW CORE	VT	VINYL TILE
HM	HOLLOW METAL	w/	WITH
MHU	MANUFACTURED HOME UNIT	w/o	WITHOUT
HORIZ	HORIZONTAL	WD	WOOD
HR	HOUR	WP	WATER PROOF

SYMBOLS

- (F) — NEW BLDG. GRID
- (#) — DOOR NUMBER
- (#) — WINDOW MARKER
- ROOM NAME / # — ROOM NUMBER
- W3A — WALL TYPE
- ZONE NAME / RM # / CLG. HT #'-#" — CEILING TAG
- ELEVATION
- 4 / A501 — DETAIL NUMBER / SHEET NUMBER — DETAIL SYMBOL
- 3/A200 — DETAIL NUMBER / SHEET NUMBER — DETAIL CUT
- 4 / A300 — SECTION NUMBER / SHEET NUMBER — WALL SECTION
- 3/A400 — SHEET NUMBER / ELEVATION NUMBER — BLDG. ELEVATION
- 3 / A202 — SECTION LETTER / SHEET NUMBER — BLDG. SECTION
- # / # A500 # / # — ELEVATION NUMBER / SHEET NUMBER — WALL ELEVATION
- J / A300 — DRAWING NUMBER / SHEET NUMBER — TITLE — 3/4" = 1'-0"
- = DEMOLITION
- = EXISTING
- = NEW CONSTRUCTION
- = ADD ALT *(SCOPE)*

BUILDING DESCRIPTION

THE SCOPE OF THIS PROJECT IS FOR A NEW HUD MANUFACTURED HOME (MHU) ON THE EXISTING ITD STANLEY SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DEVELOP THE SITE AND PROVIDE MHU FOUNDATION PER STRUCTURAL WITH MECHANICAL, PLUMBING AND ELECTRICAL FOR THE MHU PER THE FULL SET OF DRAWINGS. THE MHU IS TO BE SITE DELIVERED ONCE FOUNDATION IS COMPLETE. HOOK-UP ALL UTILITIES, CRAWL SPACE SKIRTING INSTALLED, AND CANOPY ROOFS WITH STAIRS & LANDING INSTALLED AS PART OF THE PROJECT COMPLETION.

THE MANUFACTURED HOME UNIT IS PURCHASED AND INSTALLED BY THE CONTRACTOR.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW FULL JURISDICTION or IDOPL PERMITTING REQUIREMENTS, TO INCLUDE BUT NOT LIMITED TO:

Factory built structures will be reviewed through the modular building program, approved, inspected and then given a insignia, prior to installation. The installation will require a permit and inspections, per the Idaho Manufactured installation instructions.

Manufactures installation instructions to be on site for inspectors, inspection, and verification of installation. Inspector to ensure that the roof snow loading requirements are met for the jurisdiction in which the project is built.

BLDG. INFO.

ACTUAL MHU AREA: 934 SF

OCCUPANCY CLASSIFICATION: (R) Residential (Manufactured Home)

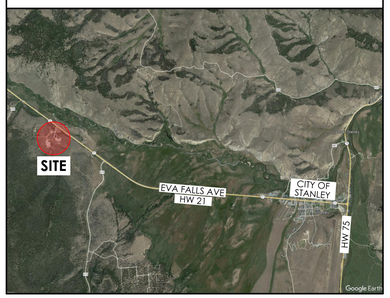
Manufactured Home: Homes built on/after June 15, 1976; federalized construction to one single, nation-wide standard (24 CFR §3280) under authority of the National Manufactured Housing Construction and Safety Standards Act of 1974, signed into law by President Ford

PERMITTING THROUGH IDOPL (IDAHO DIVISION OF OCCUPATIONAL AND PROFESSIONAL LICENSES). REQUIRED PERMITTING:

- FOUNDATION PERMIT
- INSTALLATION PERMIT and INSTALLATION TAG
- ON-SITE MECHANICAL, PLUMBING AND ELECTRICAL PERMITTING

REF. INFO AT:
idahohousingassociation.org
dbs.Idaho.gov

LOCATION MAP



CONSULTANTS

STRUCTURAL ENGINEER

HECO ENGINEERS
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Nampa Office: 5700 E Franklin Rd, Suite 160 - Nampa, ID 83687
Mailing: PO Box 235 - Payette, ID 83661
Phone: 208 642 3304 x 153

ELECTRICAL & PLUMBING ENGINEER

HECO ENGINEERS
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Nampa Office: 5700 E Franklin Rd, Suite 160 - Nampa, ID 83687
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CIVIL ENGINEER

HECO ENGINEERS
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CONTACTS

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11331 WEST CHINDEN BLVD.
BOISE, IDAHO 83714
CONTACT: JACOB JACKSON
EMAIL: jackob.jackson@itd.idaho.gov

ARCHITECT

MATT FRANKEL
122 S. MAIN STREET SUITE 1
POCATELLO, ID 83240
PH: 208.232.3741
E-MAIL: matt@myersanderson.com

DEFERRED SUBMITTALS

N/A

DRAWING INDEX

Myers ■ Anderson
▪ Architecture ▪ Interior Design ▪ Historic Preservation
122 South Main Street ▪ Pocatello, Idaho 83204 ▪ Tel. (208) 232 - 3741 ▪ Fax (208) 232 - 3782

REGISTERED PROFESSIONAL ARCHITECT
AR 987379
MATTHEW FRANKEL
STATE OF IDAHO
AIA NCARB ASID

PROJECT NAME:
ITD D4 STANLEY
HUD Manufactured Home and Site Design
STANLEY, ID

SHEET TITLE:
COVER SHEET

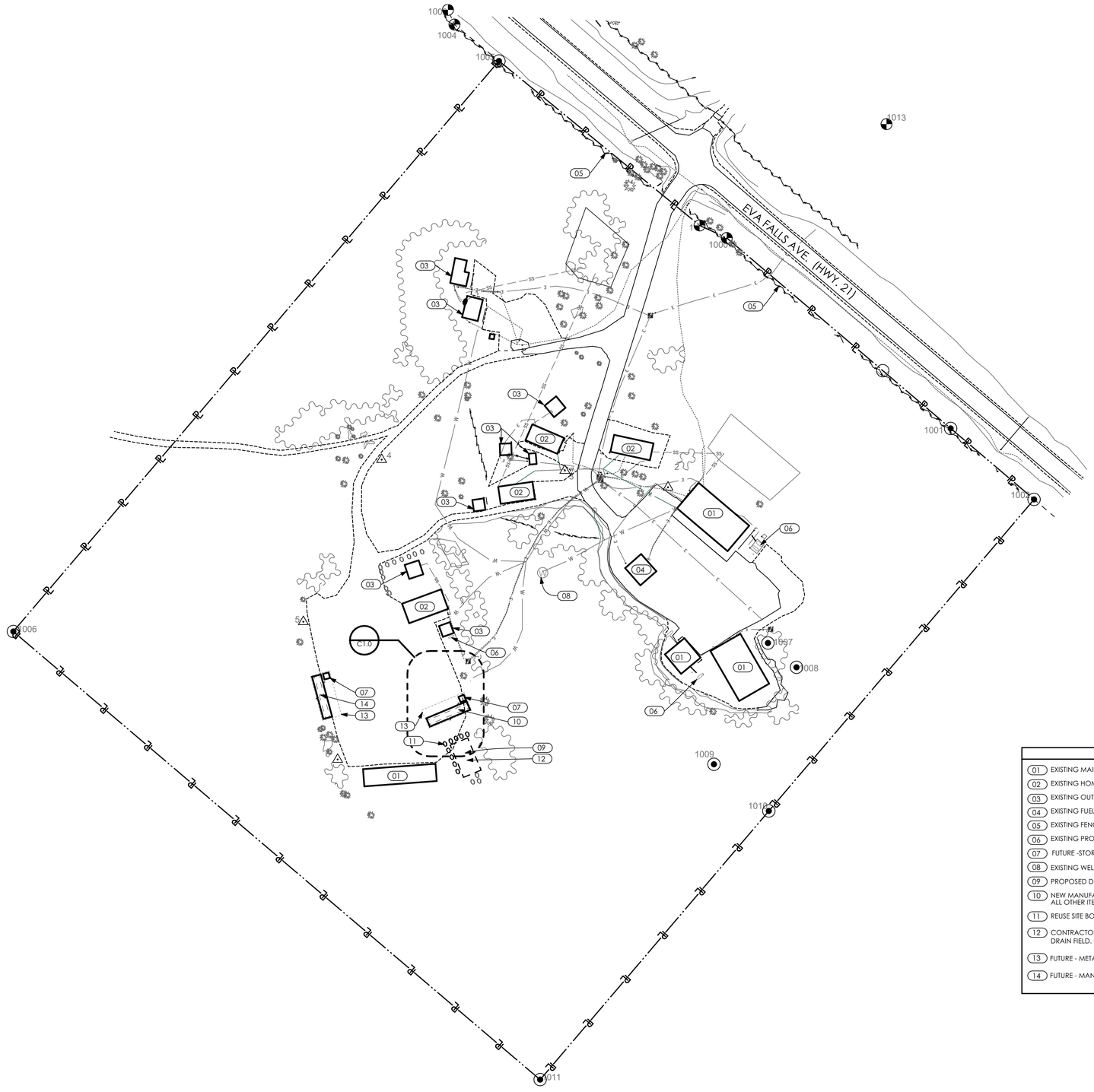
DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION	DATE

CLIENT PROJ. NUMBER:
ARCH. JOB NUMBER: 23607
SHEET ISSUED DATE: April 2024
SHEET **G100**



LEGEND

- SET 5/8" REBAR W/RPC "DEA CONTROL"
- FOUND BRASS CAP PER ROS 262930
- FOUND 5/8" IRON ROD W/YPC PLS 8806
- CALCULATED POINT
- WELL
- PROPANE TANK
- CONIFER TREE
- BOULDER
- WATER TANK/FILL

SITE PLAN KEYED NOTES

01 EXISTING MAINTENANCE BUILDING TO REMAIN.
02 EXISTING HOME TO REMAIN.
03 EXISTING OUTBUILDING TO REMAIN.
04 EXISTING FUEL BUILDING TO REMAIN.
05 EXISTING FENCE TO REMAIN.
06 EXISTING PROPANE TANKS TO REMAIN.
07 FUTURE -STORAGE SHED *(NOT IN SCOPE)*
08 EXISTING WELL
09 PROPOSED DRAIN FIELD. SEE CIVIL.
10 NEW MANUFACTURED HOME CONTRACTOR SHALL REMOVE ALL DEBRIS, VEGETATION AND ALL OTHER ITEMS ON SITE FOR NEW MANUFACTURED HOME.
11 REUSE SITE BOULDERS TO CREATE PERIMETER AROUND DRAIN FIELD.
12 CONTRACTOR TO REMOVE ALL VEGETATION IN THIS AREA IN PREPARATION FOR NEW DRAIN FIELD. COORDINATE WITH CIVIL DRAWINGS.
13 FUTURE - METAL BUILDING OVER BUILD *(NOT IN SCOPE)*
14 FUTURE - MANUFACTURED HOME LOCATION *(NOT IN SCOPE)*

1 SP100 **ARCHITECTURAL SITE PLAN**

SCALE: 1" =100'

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REGISTERED PROFESSIONAL ARCHITECT
AR 987379
MATTHEW FRANKEL
STATE OF IDAHO
AIA NCARB ASID

PROJECT NAME:
ITD D4 STANLEY
HUD Manufactured Home and Site Design
STANLEY, ID

SHEET TITLE:
ARCHITECTURAL SITE PLAN

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

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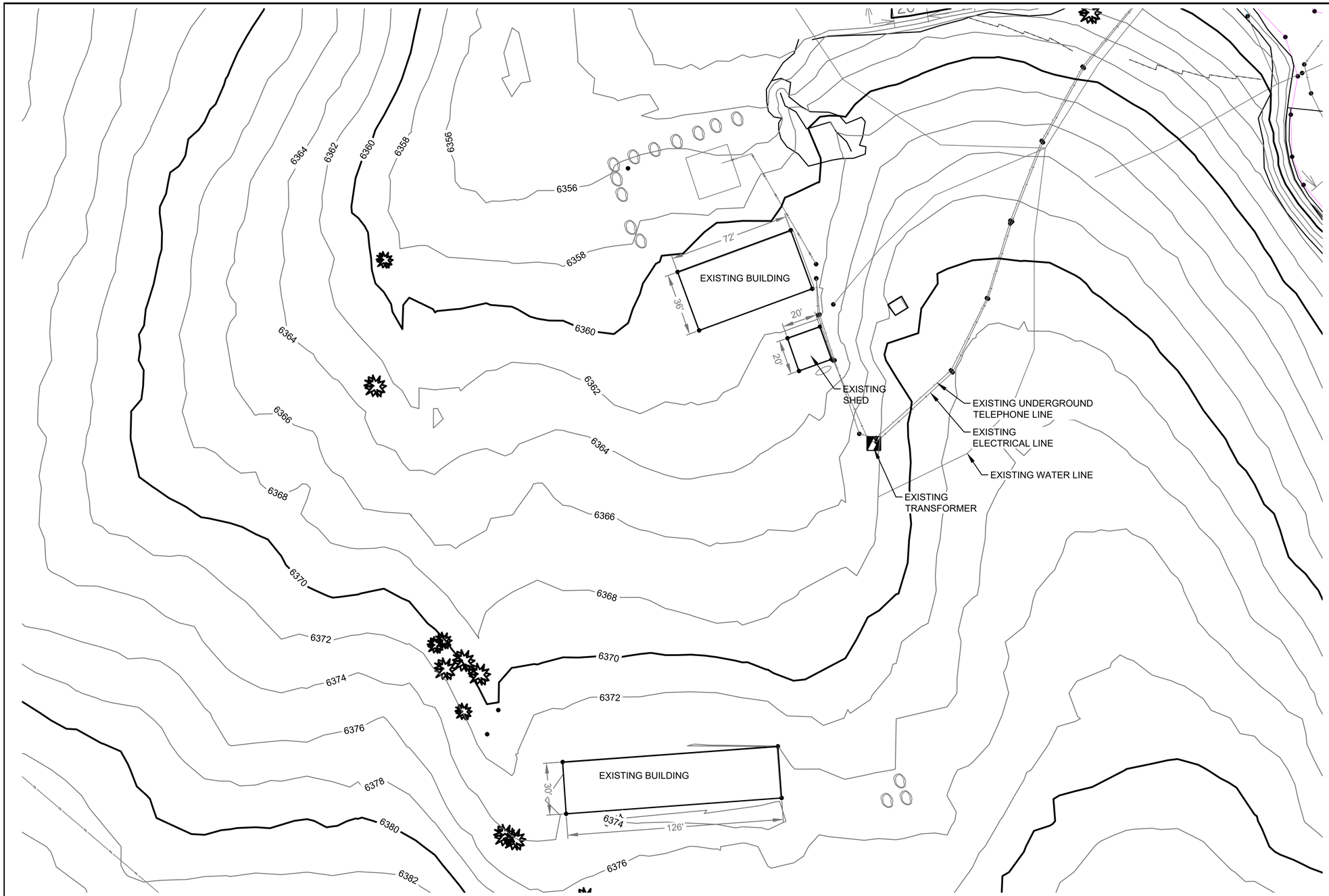

1 C0.1 EXISTING SITE LAYOUT

HECO ENGINEERS

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PROFESSIONAL ENGINEER LICENSED 14844 STATE OF IDAHO BART BROOKE
1-31-24
AIA NCARB ASID

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
EXISTING SITE LAYOUT

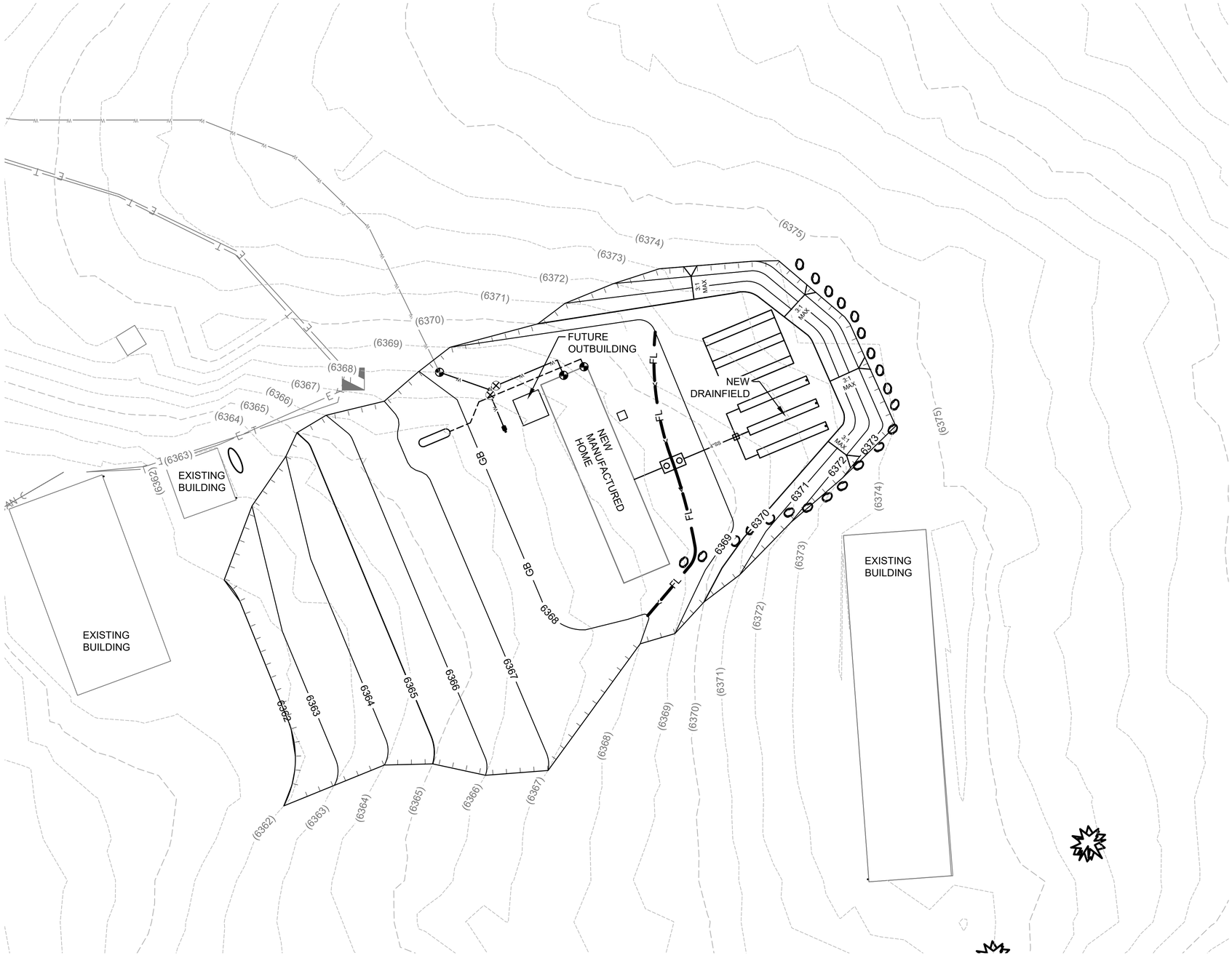
DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION	DATE

CLIENT PROJ. NUMBER:	ITD23-0375
ARCH. JOB NUMBER:	23607
SHEET ISSUED DATE:	JANUARY 2024
SHEET	C0.1



1 C1.0 OVERALL SITE LAYOUT

20' 0 20' 40'
SCALE OF FEET

HECO ENGINEERS

SHEET NOTES:

1. EXISTING UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. CONTRACTOR TO FIELD LOCATE ALL EXISTING UTILITIES AND VERIFY LOCATION AND ELEVATION PRIOR TO CONSTRUCTION.
2. SEE SHEET C2.0 FOR ENLARGED SITE LAYOUT.
3. SEE SHEET C2.0/C2.1 FOR DRAINFIELD SIZING AND DISPOSAL DETAILS.
4. SEE SHEET C3.0 FOR SITE GRADING PLAN.

LEGEND:

SS SS	SANITARY SEWER
W W W	WATER
2400	NEW CONTOUR
(2400)	EXISTING CONTOUR
E	EXISTING ELECTRICAL LINE
T	EXISTING UNDERGROUND TELEPHONE LINE
FL	FLOW LINE
GB	GRADE BREAK
	DAYLIGHT LINE
	ISOLATION VALVE
	FROST-FREE YARD HYRANT

ABBREVIATIONS:

EA	EACH
EG	EXISTING GRADE
FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOW LINE
FS	FINISH SURFACE
GB	GRADE BREAK
GPD	GALLONS PER DAY
HP	HIGH POINT
LP	LOW POINT
MAX	MAXIMUM
MIN	MINIMUM
POC	POINT OF CONNECTION
SF	SAFETY FACTOR
SF	SQUARE FOOT
S	SEWER
SS	SANITARY SEWER
TYP	TYPICAL
W	WATER

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PROFESSIONAL ENGINEER LICENSED 14844 STATE OF IDAHO BART BROOKE
1-31-24
ASID NCARB AIA

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
OVERALL SITE LAYOUT, LEGEND, AND ABBREVIATIONS

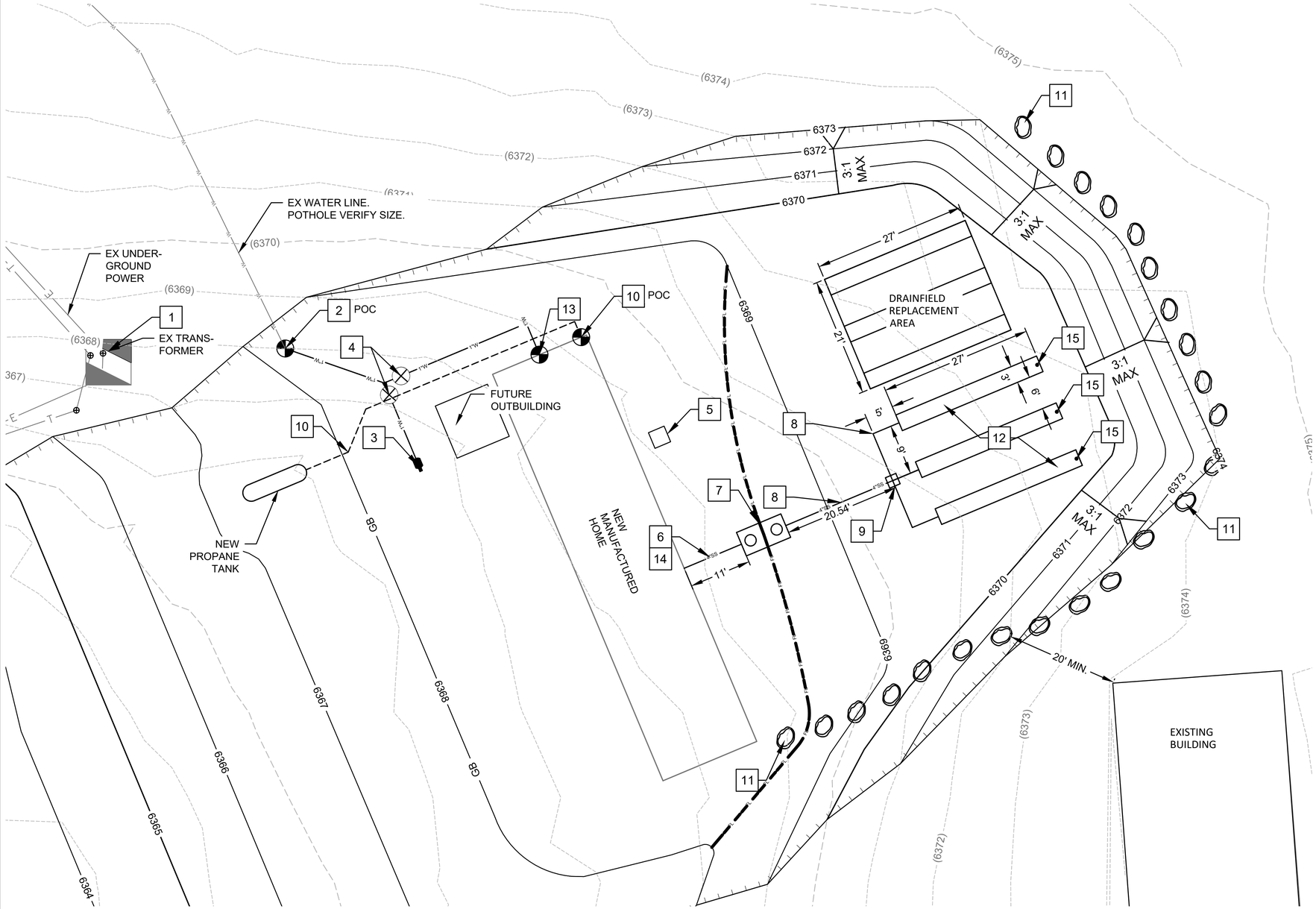
DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION	DATE

CLIENT PROJ. NUMBER:	ITD23-0375
ARCH. JOB NUMBER:	23607
SHEET ISSUED DATE:	JANUARY 2024
SHEET	C1.0



1 C2.0 SITE LAYOUT

10' 0 10' 20'
SCALE OF FEET

SHEET NOTES:

1. EXISTING UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. CONTRACTOR TO FIELD LOCATE ALL EXISTING UTILITIES AND VERIFY LOCATION AND ELEVATION PRIOR TO CONSTRUCTION.
2. THE PROPOSED DRAINFIELD SIZING IS CONSERVATIVELY OVER SIZED GIVEN THE ASSUMED SOIL APPLICATION RATE. SEE C1.1 FOR SIZING CALCULATIONS.

KEYNOTES:

1. INSTALL UNDERGROUND POWER TO CONNECT TO EXISTING TRANSFORMER. SEE ELECTRICAL SHEET FOR DETAILS.
2. CONNECT TO EXISTING WATER LINE.
3. INSTALL 1" ISOLATION BALL VALVES.
4. INSTALL WATER SERVICE WITH FROST-FREE YARD HYDRANT. SEE DETAIL 3, SHEET C2.2.
5. INSTALL 3' X 3' CONCRETE PAD FOR CONDENSER.
6. INSTALL 4" SDR-35 PVC SEWER PIPE 2% MIN.
7. INSTALL 1000-GAL SEPTIC TANK PER COUNTY HEALTH DISTRICT STANDARDS. SEE DETAIL 1, SHEET C2.2.
8. INSTALL 4" SDR-35 PVC SEWER PIPE 2% MIN. SEE DETAIL 1, SHEET C2.1.
9. INSTALL DISTRIBUTION BOX. SEE DETAIL 1, SHEET C2.2.
10. 1" LPG GAS LINE. SEE MECHANICAL DRAWING SHEET M2.0 FOR CONTINUATION.
11. RELOCATE EXISTING SITE BOULDERS TO ESTABLISH PERIMETER AROUND DRAINFIELD.
12. INSTALL DRAINFIELD PER COUNTY HEALTH DISTRICT STANDARDS. SEE DETAIL 2, SHEET C2.2.
13. 1" COLD WATER LINE. SEE MECHANICAL DRAWING SHEET M2.0 FOR CONTINUATION.
14. INSTALL RIGID INSULATION 4-INCHES THICK BY 2-FEET WIDE OVER TOP OF SEWER PIPE BETWEEN MANUFACTURED HOME EDGE OF PAD AND SEPTIC TANK. PROVIDE 6-INCH LAYER OF REJECT SAND BETWEEN TOP OF PIPE AND RIGID INSULATION.
15. INSTALL INSPECTION PORT AND VENTILATION RISER PER DETAIL 2 SHEET C2.2.

PRELIMINARY DRAINFIELD SIZING CALCULATIONS:

CURRENTLY THE EXISTING SOIL TYPE IS UNKNOWN. HOWEVER, NRCS SOIL MAPPING IN THE AREA INDICATES THE PRESENCE OF THREE SOIL TYPES:

1. CASTLEPEAK-YANKEEFORK COMPLEX,
2. REDFISH-FEZIP-LILYAKE COMPLEX, AND
3. STRUGGLE COMPLEX.

THESE ARE RESPECTIVELY ASSOCIATED WITH VERY GRAVELLY SANDY LOAM, EXTREMELY GRAVELLY SANDY LOAM, AND EXTREMELY GRAVELLY COURSE SAND. ALL THESE MATERIALS ARE CONSIDERED TO BE WELL DRAINING AND SUITABLE FOR PERCOLATION FOLLOWING SECONDARY TREATMENT THROUGH A SAND BED HAVING A MINIMUM LAYER THICKNESS OF 36-INCHES. AN ASSUMED PRELIMINARY APPLICATION RATE OF 1.2 GPD/FT^2 IS USED IN THE PRELIMINARY DESIGN.

SOIL APPLICATION RATE = 1.2 GPD/FT^2
1 NEW BUILDING WITH 3 BEDROOMS ≈ 2-3 BEDROOMS @ 250 GPD/EA (250 GPD)
ARC CHAMBERS PROVIDE (25% ALLOWABLE REDUCTION)

SYSTEM SIZING CALCULATIONS WITH ARC CHAMBERS:
LENGTH = [(250 GPD) / (1.2 GPD/FT^2)] / 3-FT^2/LF = 69-FT
TWENTY-FIVE PERCENT REDUCTION = 69-FT(0.75) = 52-LF
REDUCTION LENGTH = 52.1 LF (2 LEGS EACH 27' LONG)
(USE 3 LEGS EACH 27' LONG) = 81-FT
PRELIMINARY DESIGN SAFETY FACTOR = 81/52 = S.F. 1.56

SYSTEM SIZING USING A STANDARD SYSTEM WITH 6-FT SEPARATION BETWEEN TRENCH SIDEWALLS:
AREA REQUIRED = [(250 GPD / (1.2 GPD/FT^2)] = 208.33 FT^2
TRENCHES = (3) TRENCHES 27'-0" X 4' WIDE = 324 FT^2
PRELIMINARY DESIGN SAFETY FACTOR = 324/208 = S.F. 1.56

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PROFESSIONAL ENGINEER LICENSED 14844 STATE OF IDAHO BART BROOKE
1-31-24
ASD NCARB AIA

PROJECT NAME: HUD Manufactured Home and Site Design

SHEET TITLE: SITE LAYOUT

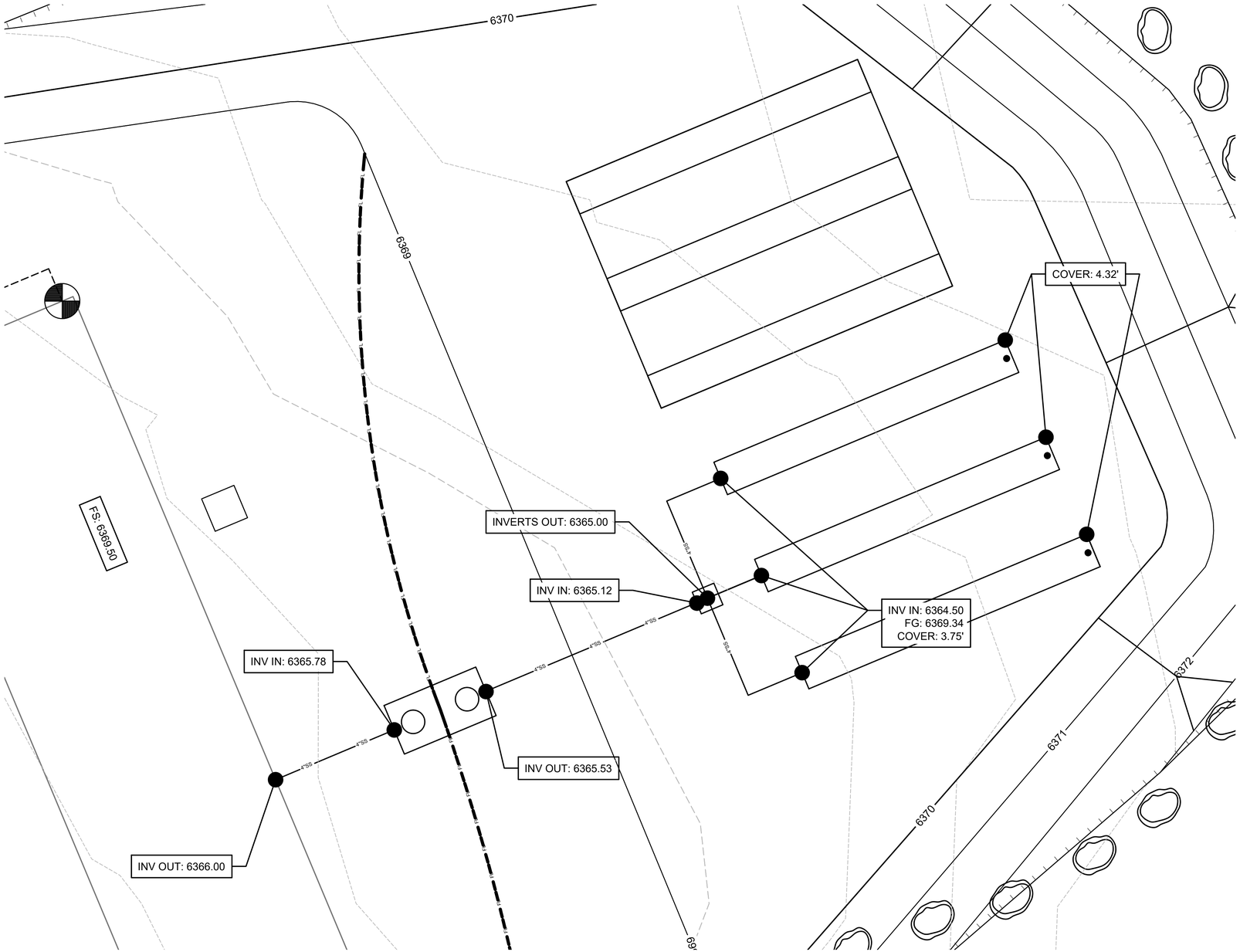
DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION	DATE

CLIENT PROJ. NUMBER:	ITD23-0375
ARCH. JOB NUMBER:	23607
SHEET ISSUED DATE:	JANUARY 2024
SHEET	C2.0



1 C2.1 SITE LAYOUT

5' 0 5' 10'
SCALE OF FEET

SHEET NOTES:

1. EXISTING UTILITIES ARE SHOWN AT APPROXIMATE LOCATIONS. CONTRACTOR TO FIELD LOCATE ALL EXISTING UTILITIES AND VERIFY LOCATION AND ELEVATION PRIOR TO CONSTRUCTION.
2. THE PROPOSED DRAINFIELD SIZING IS CONSERVATIVELY OVER SIZED GIVEN THE ASSUMED SOIL APPLICATION RATE. SEE C1.1 FOR SIZING CALCULATIONS.
3. FINAL INVERT ELEVATIONS TO BE VERIFIED BY ENGINEER UPON PERMIT ISSUANCE BY COUNTY HEALTH DISTRICT PRIOR TO CONSTRUCTION AS SEWER TREATMENT AND DISPOSAL SYSTEM PERMIT ISSUANCE MAY AFFECT FINAL DESIGN.
4. CONTRACTOR SHALL FOLLOW INFILTRATOR'S INSTALLATION REQUIREMENTS FOR COVER UP TO AND OVER 4-FEET. CONTACT THE TECHNICAL SERVICE DEPARTMENT (800) 221-4436 FOR CURRENT INSTALLATION INSTRUCTIONS.
5. INSTALL RIGID INSULATION 4-INCHES THICK BY 2-FEET WIDE OVER TOP OF SEWER PIPE BETWEEN MANUFACTURED HOME EDGE OF PAD AND SEPTIC TANK. PROVIDE 6-INCH LAYER OF REJECT SAND BETWEEN TOP OF PIPE AND RIGID INSULATION.

HECO ENGINEERS

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PROFESSIONAL ENGINEER LICENSED 14844 STATE OF IDAHO BART BROOKE
ASID NCARB AIA
1-31-24

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
SEWER LAYOUT

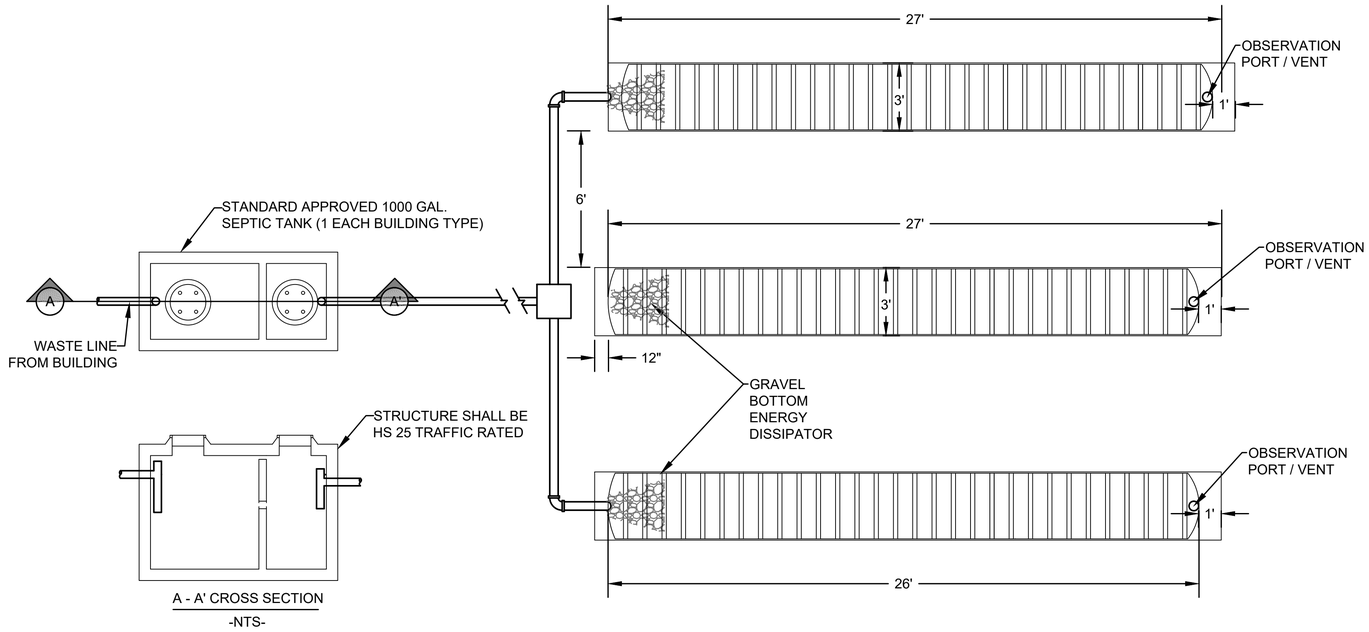
DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

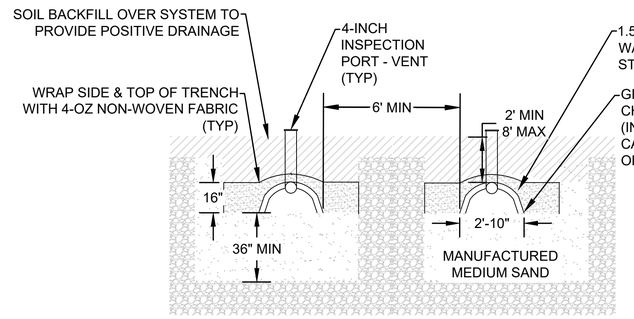
DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION	DATE

CLIENT PROJ. NUMBER:	ITD23-0375
ARCH. JOB NUMBER:	23607
SHEET ISSUED DATE:	JANUARY 2024
SHEET	C2.1



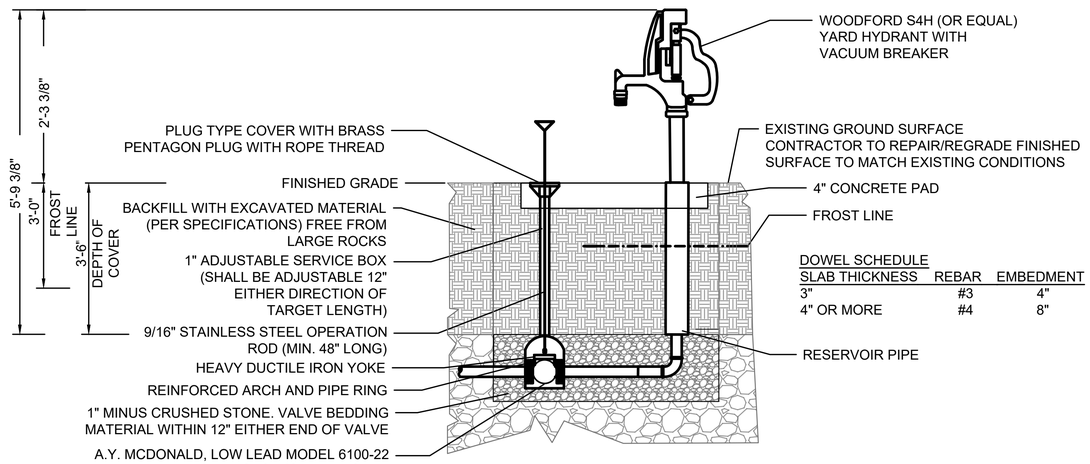
1 C2.2 SEPTIC SYSTEM & DRAINFILED ENLERGED PLAN DETAIL
SCALE: NTS



2 C2.2 DRAINFIELD SECTIONS
SCALE: NTS

SHEET NOTES:

1. PRELIMINARY DRAINFIELD SIZING NEEDS TO BE CONFIRMED PENDING RESULTS BASED ON STATE HEALTH DISTRICT SITE INSPECTION.



DOWEL SCHEDULE

SLAB THICKNESS	REBAR	EMBEDMENT
3"	#3	4"
4" OR MORE	#4	8"

NOTES:

1. SERVICE BOX SHALL ACCOMMODATE UP TO 1" SERVICE.
2. SERVICE BOX TO BE INSTALLED IN SUCH A MANNER AS TO ENSURE IT WILL BE FREE FROM OBSTRUCTIONS AND DEBRIS AND THAT NO MATERIAL WILL INTERFERE WITH VALVE OPERATION.
3. ONE HYDRANT LOCATION IS INSTALLED IN A CONCRETE PAD. CONTRACTOR SHALL REPLACE PAD REMOVED DURING INSTALLATION. IF A CONCRETE PATCH IS REQUIRED THE PATCH SHALL BE DOWELED: SEE SCHEDULE FOR REBAR SIZE AND EMBEDMENT ABOVE. SEE SHEET C2.0 FOR HYDRANT LOCATION.

3 C2.2 YARD HYDRANT
SCALE: NTS

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PROFESSIONAL ENGINEER LICENSED 14844 STATE OF IDAHO BART BROOKE
1-31-24

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
SEWER & WATER DETAILS

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

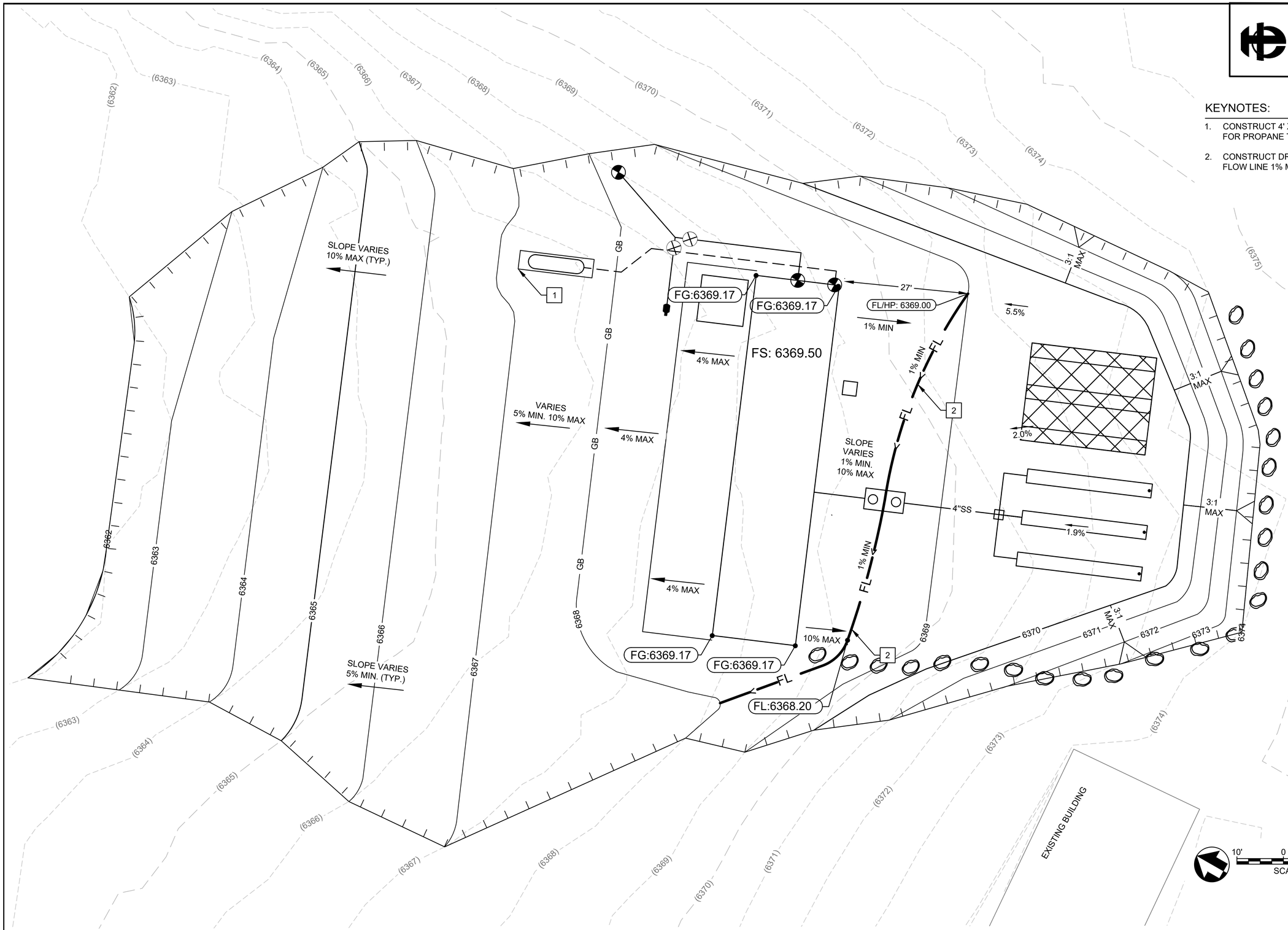
REVISION	DATE

CLIENT PROJ. NUMBER: ITD23-0375
ARCH. JOB NUMBER: 23607
SHEET ISSUED DATE: JANUARY 2024
SHEET C2.2

HECO ENGINEERS

KEYNOTES: [#]

1. CONSTRUCT 4' X 16' LEVEL PAD FOR PROPANE TANK.
2. CONSTRUCT DRAINAGE SWALE FLOW LINE 1% MIN SLOPE.



1 C3.0 GRADING PLAN

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PROFESSIONAL ENGINEER LICENSED 14844 STATE OF IDAHO BART BROOKE — ASID NCARB AIA

1-31-24

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
GRADING PLAN

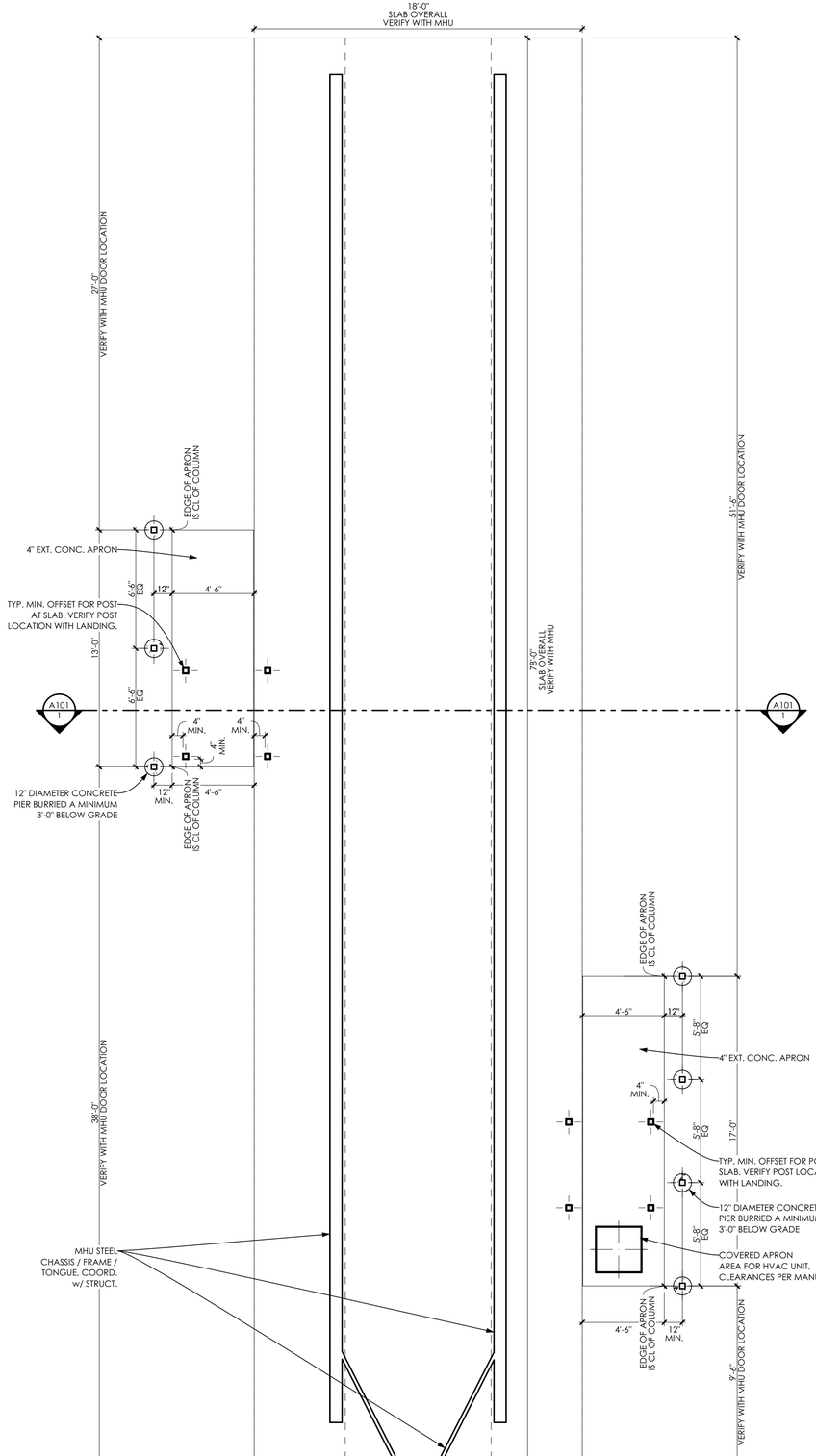
DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

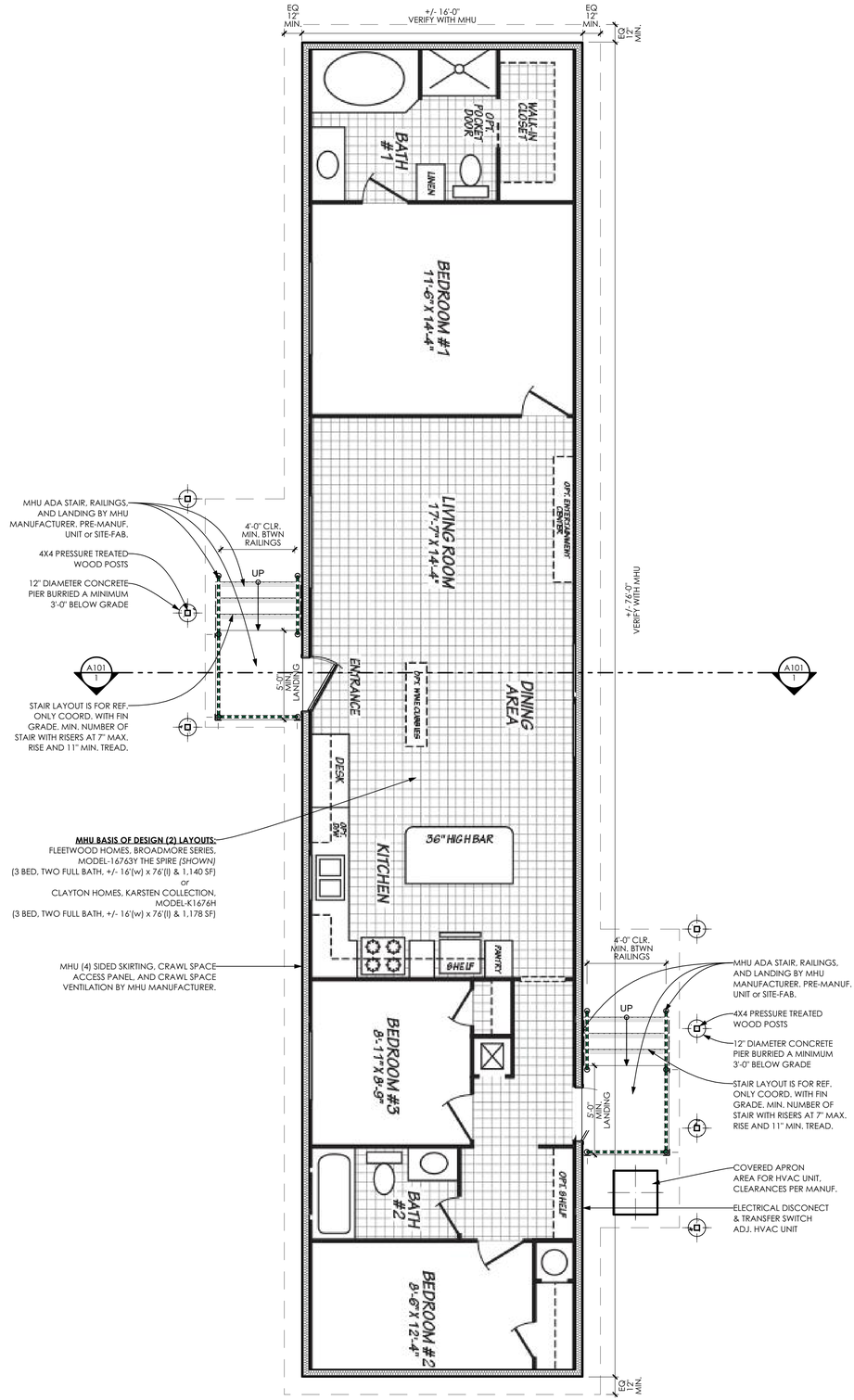
REVISION	DATE

CLIENT PROJ. NUMBER:	ITD23-0375
ARCH. JOB NUMBER:	23607
SHEET ISSUED DATE:	JANUARY 2024
SHEET	C3.0



2 MHU MAIN FRAME PLAN

A100 SCALE: 1/4" = 1'-0"



MHU BASIS OF DESIGN (2) LAYOUTS:
FLEETWOOD HOMES, BROADMORE SERIES, MODEL-16763Y THE SPIRE *(SHOWN)*
(3 BED, TWO FULL BATH, +/- 16'(w) x 76'(l) & 1,140 SF)
or
CLAYTON HOMES, KARSTEN COLLECTION, MODEL-K1676H
(3 BED, TWO FULL BATH, +/- 16'(w) x 76'(l) & 1,178 SF)

1 MHU FLOOR PLAN

A100 SCALE: 1/4" = 1'-0"

GENERAL NOTES

1) VERIFY MHU FINAL SIZE PRIOR TO SLAB LAYOUT AND INSTALLATION.

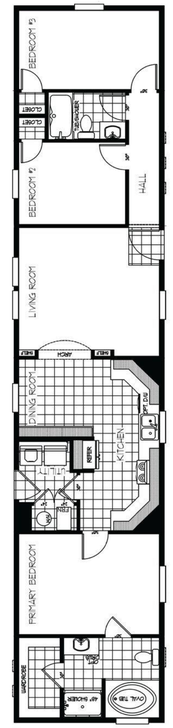
2) SEE PLUMBING, AND ELECTRICAL SHEET FOR ALL MHU ROUGH-IN AND HOOK-UP ITEMS.

3) ALL LOCATIONS FOR STAIR CONC. APRONS, STAIRS, RAILINGS, AND LANDINGS WILL NEED TO BE FIELD VERIFIED PRIOR TO INSTALLATION BASED ON MHU SELECTION & LAYOUT.

4) ALL LOCATIONS FOR CANOPY COLUMN FOUNDATIONS, CANOPY COLUMNS, CANOPY ROOF FRAMING, AND ASSOCIATED CANOPY ROOFING ITEMS WILL NEED TO BE FIELD VERIFIED PRIOR TO INSTALLATION BASED ON MHU SELECTION & LAYOUT.

5) ALL MHU SELECTIONS SHALL MEET MINIMUM SNOW LOAD OF 128 PSF AND MINIMUM WIND SPEED OF 115 MPH.

6) ALTERNATE MHU FLOOR PLAN: *(BELOW)*
CLAYTON HOMES, KARSTEN COLLECTION, MODEL - K1676H
(3 BED, TWO FULL BATH, +/- 16'(w) x 76'(l) & 1,178 SF)



PERMITS

01. Installation Permits. As required by Title 44, Chapter 22, Idaho Code, permits shall be obtained, using application forms furnished by the authority having jurisdiction, before installing a manufactured home on a building site or in a park. This includes manufactured homes set up for display in manufactured home parks, mobile home parks, subdivisions, and residential lots, and that are occupied on a sales lot.

02. Fees. Permit fees shall be those established by the authority having jurisdiction (IDOPL)

03. Permits After Setting. All work completed after setting must be performed in accordance with permits issued by the authority having jurisdiction (IDOPL), and must meet all codes and standards.

04. Local. Pursuant to Section 44-2202, Idaho Code, all local jurisdictions which have adopted a building code and the IDOPL in jurisdictions that have not shall issue permits and inspect all manufactured/mobile home installations for the purpose of determining compliance with IDAPA Rule 07.03.12.020.

05. Installer. All installations shall be inspected by a licensed installer or a responsible managing employee (RME) and a copy of such inspection records, using a Division approved form (available online at dbs.idaho.gov) , shall be provided to the owner upon completion of the inspection.

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REGISTERED PROFESSIONAL ARCHITECT
AR 987379
MATTHEW FRANKEL
STATE OF IDAHO
AIA NCARB ASID

ITD D4 STANLEY
HUD Manufactured Home and Site Design
STANLEY, ID

PROJECT NAME:

SHEET TITLE:

OVERALL FLOOR PLANS

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION	DATE

CLIENT PRO.: NUMBER:

ARCH. JOB NUMBER: 23607

SHEET ISSUED DATE: April 2024

SHEET **A100**

FLEETWOOD HOMES, BROADMORE SERIES, MODEL-16763Y THE SPIRE

Standard Features

- Bathroom Additional Specs: Framed bathroom mirrors / Towel bar & tissue holder
- Bathroom Cabinets: 36" height lavy cabinet
- Bathroom Faucets: Dual handle faucets
- Bathroom Shower: 60" 3 pc. ABS tub/shower per plan in Mbath / 60" 3 pc. ABS tub/shower in Guest Bath
- Insulation (Ceiling): R-28
- Exterior Wall On Center: 16" o.c.
- Floor Decking: 19/32" T&G OSB floor decking
- Front Rear Eaves: 6" Eave all sides Multi section
- Side Wall Height: 8' flat ceilings
- Front Door: 36" In-swing front door w/deadbolt
- Rear Door: 34" Fiberglass out-swing rear door w/deadbolt
- Shingles: Class A fire rated limited lifetime architectural shingles
- Window Trim: 4" trim all windows / Painted shutters FDS & hitch end (multi section) / Painted shutters hitch end only (single section)
- Ceiling Texture: Textured ceilings (orange peel)
- Interior Doors: 2-Panel white interior doors / Residential style mortise door hinges (3)
- Kitchen Backsplash: Laminate backsplash
- Kitchen Drawer Type: Bank of drawers
- Kitchen Flooring: Vinyl flooring
- Kitchen Range Type: 30" stainless steel Whirlpool free standing electric range, w/clock, window & timer
- Ceiling Fans: Wire & brace for ceiling fan in living room
- Electrical Service: 200 Amp all electric service (gas optional)
- Shut Off Valves Throughout: Shut-off valve on toilets
- Water Shut Off Valves: Master water shut-off valve
- Window Decor: 2" Wood Faux blinds optional
- Bathroom Backsplash: Laminate backsplash
- Bathroom Fans: Exhaust fan
- Bathroom Flooring: Vinyl flooring
- Bathroom Sink: Acrylic sink
- Additional Specs: Black roof vents
- Endwall Eaves: No rear end wall eave on singlewides
- Exterior Wall Studs: 2" x 4" Exterior walls
- Insulation (Floors): R-22
- Roof Load: 30 lb. Roof load
- Insulation (Walls): R-11
- Exterior Lighting: Porch lights all exterior doors
- Roof Pitch: 3:12 Roof pitch
- Siding: LP Smart Panel exterior siding
- Window Type: White waterfall window & door trim
- Carpet Grade: Factory select Livewire carpet (shipped loose on multi-wides) / 7/16" – 7# Carpet pad (shipped loose on multi-wides)
- Corner Wall Type: Factory select vinyl covered wall panels T/O
- Interior Lighting: LED can lights T/O
- Kitchen Cabinetry: MDF face frame & cabinet door / 30" overhead kitchen cabinets / Shelf & Bead board above refrigerator / Wood ply drawer sides
- Kitchen Faucets: Dual handle chrome faucet
- Kitchen Range Hood: 30" power range hood with light
- Kitchen Refrigerator: 18 cu. ft. stainless steel Whirlpool frost free refrigerator
- Kitchen Sink: 7" Double cell stainless steel sink
- Home Warranty Info: 1 Year structural warranty (see warranty manual for complete details)
- Furnace: Electric furnace
- Water Heater: 30 gallon electric water heater
- Exterior Outlets: GFI patio plug near rear door

MHU SELECTION NOTES:

1) ALL MHU FINISH SELECTIONS, INTERIOR AND EXTERIOR, ARE TO BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL VIA MHU SUBMITTAL. MHU SUBMITTAL SHOULD INCLUDE ALL STANDARD OPTION FOR FLEETWOOD HOMES, BROADMORE SERIES, MODEL-16763Y THE SPIRE TO INCLUDE:
   - FLOOR PLAN LAYOUT WITH TILE SHOWER BATH #1 OPTION
   - GAS OPTION WITH ELEC SERVICE
   - GAS FURNACE
   - GAS WATER HEATER
   - PAINTED SHUTTER MULTI SELECTION
   - 2" BLINDS
2) PROPANE IS THE FUEL SOURCE FOR THE BUILDING, GAS APPLIANCES SELECTION WHERE AVAILABLE. COORD. w/ CIVIL DRAWING FOR TANK CONNECTION.
3) ALL MHU SELECTIONS SHALL MEET MINIMUM SNOW LOAD OF 128 PSF AND MINIMUM WIND SPEED OF 115 MPH.

CLAYTON HOMES, KARSTEN COLLECTION, MODEL-K1676H

Standard Features

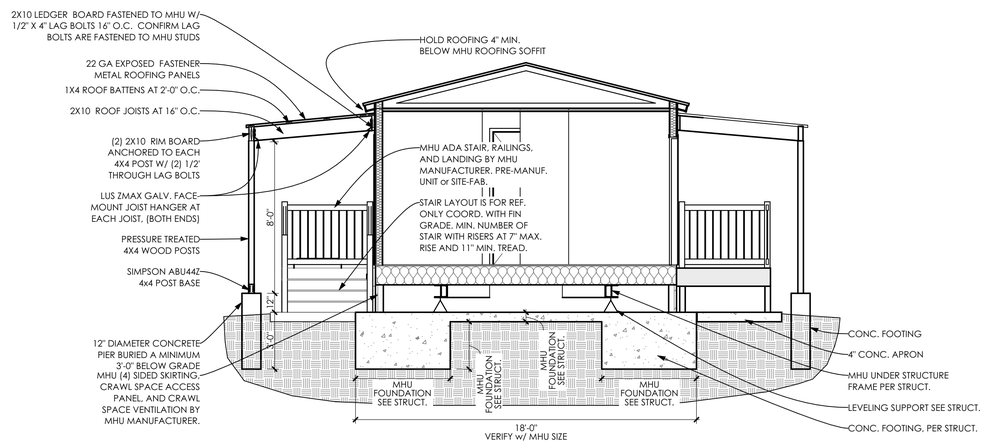
- Bathroom Additional Specs: Bathroom Towel Bars & Tissue Holders / Standard Window in Bath(Model Specific)
- Bathroom Sink: Rectangular Porcelain Bath Sinks
- Additional Specs: Kwikset® Exterior Locksets / Exterior GFI Receptable at Front & Rear Doors / Exterior Hose Bibb
- Exterior Wall Studs: x6 Exterior Walls
- Insulation (Floors): R22
- Front Rear Eaves: 12" Residential Eaves (6" Eaves for Singlewide Sidewalls)
- Interior Wall Studs: 2x4 Interior Walls
- Roof Truss: Engineered Trusses
- Insulation (Walls): R19
- Front Door: 36" 6-Panel In-Swing Fiberglass Front Door with Deadbolt, Knocker, & Viewer
- Rear Door: 36" 6-Panel In-Swing Fiberglass Rear Door with Deadbolt
- Shingles: CertainTeed® Landmark® Series Designer Architectural Shingles w/Pro-Rated Lifetime Warranty
- Interior Doors: Raised Panel Interior Passage Doors w/Mortised Hinges & Residential Door Stops
- Wall Finish: Single Color Paint for Walls & Ceilings (Low-VOC Paint)
- Window Treatment: Cased & Trimmed Windows T/O (Excluding Transoms)
- Kitchen Cabinetry: European Frameless Component Cabinet System with ¾" Construction / 30" Tall Overhead Cabinets / 36" Base Cabinet Height / Cityscape Overhead Cabinets Above Range/Fridge / 2.75" Cabinet Crown Molding
- Kitchen Lighting: Recessed LED Can Lighting in Kitchen & Dining Room
- Kitchen Refrigerator: Frigidaire 18CF Black or White Refrigerator w/Top Freezer
- Furnace: Carrier® SmartComfort™ High-Eff Gas or Electric Downflow Furnace
- Shut Off Valves Throughout: Master Water Shutoff Valve
- Washer Dryer Hook Up: Prep for Electric Dryer and Washer
- Water Shut Off Valves: Water Shut-Off Valves T/O
- Roof Decking: 7/16" OSB Roof Decking
- Bathroom Lighting: Recessed LED Can Lights Above Sinks & Showers
- Bathroom Shower: 1 Piece 60" Fiberglass Shower in Master Bath w/Glass Door/Enclosure / 1 Piece 60" Tub/Shower Combo in Guest Baths
- Bathroom Toilet Type: Elongated Toilets
- Insulation (Ceiling): R33
- Exterior Wall On Center: 16" O.C.
- Floor Decking: 5/8" Interlocking Tongue and Groove OSB Floor Decking
- Floor Joists: 2x6 Floor Joists on 27" Wide & 40'-6" Wide Homes / 2x8 Floor Joists on 30" Wide & 15'-6" Wide Homes / Floor Joists 16" On Center
- Interior Wall On Center: 24" O.C.
- Roof Load: 20# Roof Load
- Side Wall Height: 8'-6" Sidewall Height - Flat Ceilings
- Dormer: Standard Dormer Model Specific
- Exterior Lighting: Coach Light at Exterior Doors
- Roof Pitch: 3:12 Roof Pitch 27' Wide Homes / 3:12 Roof Pitch 15'-6" Wide Homes / 2.59:12 Roof Pitch 30' Wide Homes / 2.13:12 Roof Pitch 40'-6" Wide Homes
- Siding: LP® SmartSide® Panel Siding
- Window Type: Kinro Dual-Pane Low-E Vinyl Thermopane Windows
- Interior Lighting: LED Lighting T/O Home
- Interior Walls: 1/2" American Drywall, Tape & Texture T/O w/Bullnose Rounded Corners, Orange Peel Texture
- Kitchen Backsplash: 4" Laminate Backsplash & Crescent Edge
- Kitchen Custom Options: Wilsonart® Laminate Countertops
- Kitchen Drawer Type: Solid Wood Cab Doors & Drawer Fronts
- Kitchen Faucets: Pfister® Brushed Nickel Metal Faucets
- Kitchen Range Type: Frigidaire Black or White Gas or Electric Coil Range (4-Burners)
- Kitchen Sink: White Acrylic 9" Deep Sink w/Sprayer
- Heat Duct Registers: Perimeter Floor Duct System (Central Floor Ducts on Single Section Homes)
- Thermostat: Ecobee 3 Pro Smart Thermostat
- Water Heater: Rheem® 40 Gallon Electric Water Heater
- Exterior Outlets: Exterior GFI Receptacle (2)

MHU SELECTION NOTES:

1) ALL MHU FINISH SELECTIONS, INTERIOR AND EXTERIOR, ARE TO BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL VIA MHU SUBMITTAL. MHU SUBMITTAL SHOULD INCLUDE ALL STANDARD OPTION FOR CLAYTON HOMES, KARSTEN COLLECTION, MODEL-K1676H.
2) PROPANE IS THE FUEL SOURCE FOR THE BUILDING, GAS APPLIANCES SELECTION WHERE AVAILABLE. COORD. w/ CIVIL DRAWING FOR TANK CONNECTION.
3) ALL MHU SELECTIONS SHALL MEET MINIMUM SNOW LOAD OF 128 PSF AND MINIMUM WIND SPEED OF 115 MPH.

2 A101 MHU STANDARD OPTIONS AND NOTES

SCALE: 1" = 1'-0"



1 A101 BUILDING SECTION @ CANOPY

SCALE: 1/4" = 1'-0"

GENERAL NOTES

1) VERIFY MHU FINAL SIZE PRIOR TO SLAB LAYOUT AND INSTALLATION.
2) SEE PLUMBING, AND ELECTRICAL SHEET FOR ALL MHU ROUGH-IN AND HOOK-UP ITEMS.
3) ALL LOCATIONS FOR STAIR CONC. APRONS, STAIRS, RAILINGS, AND LANDINGS WILL NEED TO BE FIELD VERIFIED PRIOR TO INSTALLATION BASED ON MHU SELECTION & LAYOUT.
4) ALL LOCATIONS FOR CANOPY COLUMN FOUNDATIONS, CANOPY COLUMNS, CANOPY ROOF FRAMING, AND ASSOCIATED CANOPY ROOFING ITEMS WILL NEED TO BE FIELD VERIFIED PRIOR TO INSTALLATION BASED ON MHU SELECTION & LAYOUT.
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PERMITS

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04. Local. Pursuant to Section 44-2202, Idaho Code, all local jurisdictions which have adopted a building code and the IDOPL in jurisdictions that have not shall issue permits and inspect all manufactured/mobile home installations for the purpose of determining compliance with IDAPA Rule 07.03.12.020.

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REGISTERED PROFESSIONAL ARCHITECT
ID 987379
MATTHEW FRANKEL
STATE OF IDAHO
AIA NCARB ASID

PROJECT NAME:
ITD D4 STANLEY
HUD Manufactured Home and Site Design
STANLEY, ID

SHEET TITLE:
SECTION AND MHU INFO

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

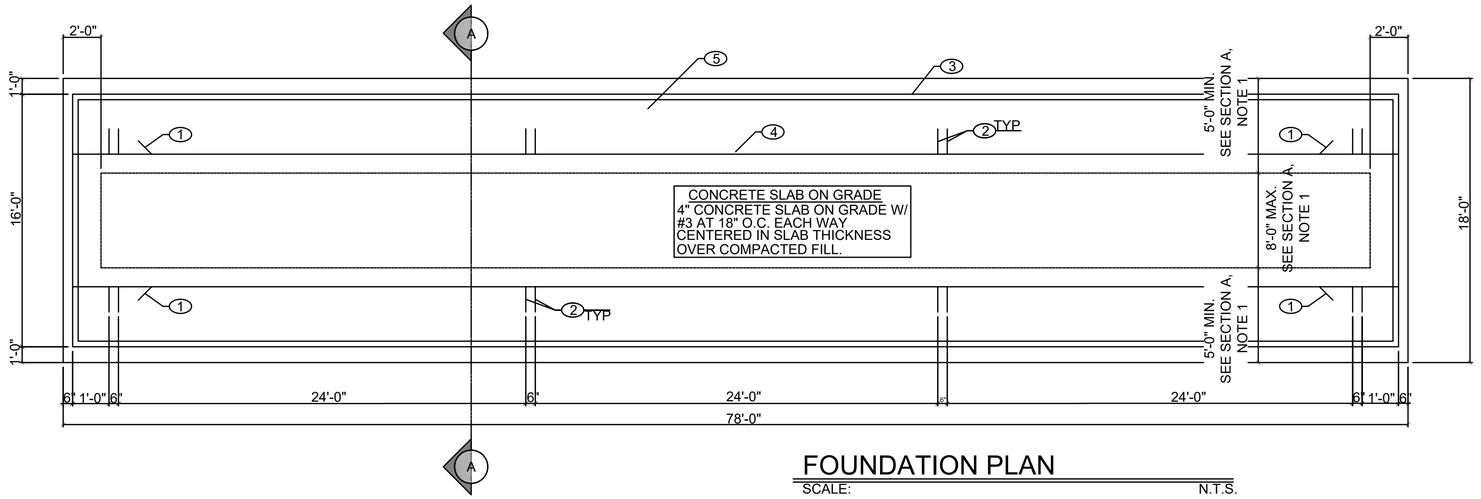
REVISION	DATE

CLIENT PROJ. NUMBER:

ARCH. JOB NUMBER: 23607

SHEET ISSUED DATE: April 2024

SHEET **A101**



FOUNDATION PLAN

SCALE: N.T.S.

PLAN KEYNOTES

1. LONGITUDINAL HOLD DOWN ANCHOR, SEE DETAIL 1 OF S1.1
2. TRANSVERSE HOLD DOWN ANCHOR, SEE DETAIL 2 OF S1.1
3. PERIMETER SKIRT WALL BY OTHERS, SEE DETAIL 3 OF S1.1
4. MODULAR CHASSIS/FRAME BEAM BY MOBILE HOME MANUFACTURER
5. CONCRETE FOOTING, SEE DETAILS
6. MODULAR BUILDING BY MOBILE HOME MANUFACTURER

GENERAL NOTES:

1. DESIGN IS BASED ON A SINGLE 16' WIDE MANUFACTURED HOME . CONTRACTOR TO COORDINATE WITH THE MANUFACTURER AND INFORM THE ENGINEER FOR A REDESIGN IF ANY OF THE FOLLOWING IS UNTRUE:

   A. WEIGHT OF THE MANUFACTURED HOME IS BETWEEN 305 LBS AND 493.5 LBS PER LINEAR FOOT. THE DISTRIBUTED WEIGHT SHALL BE DETERMINED BY TAKING THE TOTAL WEIGHT OF THE HOME, INCLUDING MECHANICAL EQUIPMENT, AND DIVIDING IT BY THE LENGTH OF THE HOME.

   B. THE MODULAR STEEL CHASSIS OR FRAME MEMBERS ARE AT LEAST 8 FEET APART CENTER-TO-CENTER.

CONCRETE:

1. MINIMUM 28 DAY CONCRETE STRENGTH SHALL BE AS FOLLOWS:

USE:	CONCRETE STRENGTH:	MAX W/C RATIO	AIR ENTRAINMENT
FOUNDATION	4500 PSI	0.45	5.5% ± 1%

2. ALL NORMAL WEIGHT CONCRETE SHALL BE REGULAR WEIGHT OF 150 POUNDS PER CUBIC FOOT USING HARD-ROCK AGGREGATES. AGGREGATE USED IN CONCRETE SHALL CONFORM TO ASTM C33.
3. LAP SPLICES SHALL BE 12" FOR #3 BAR AND 24" FOR #5 BAR.
4. MAXIMUM SLUMP FOR ALL CONCRETE SHALL BE 6". PORTLAND CEMENT SHALL CONFORM TO ASTM C150. TYPE V CEMENT SHALL BE USED FOR CONCRETE IN CONTACT WITH ALKALINE SOIL, AND TYPE II ELSEWHERE.
5. NO MORE THAN 90 MINUTES SHALL ELAPSE BETWEEN CONCRETE BATCHING AND CONCRETE PLACEMENT UNLESS APPROVED BY THE TESTING AGENCY.
6. CONCRETE PLACEMENT AND QUALITY SHALL BE PER RECOMMENDATIONS IN ACI 614, ACI 301, AND ACI 318. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND AND UNDER FLOOR DUCTS, ETC. CAST CLOSURE POUR, WHERE SHOWN ON PLANS AROUND COLUMNS AFTER COLUMN DEAD LOAD IS APPLIED. REMOVE ALL DEBRIS FROM FORMS BEFORE PLACING CONCRETE.
7. ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCING, DOWELS, BOLTS, ANCHORS, PIPES, SLEEVES, ETC., SHALL BE SECURELY POSITIONED IN THE FORMS BEFORE PLACING THE CONCRETE.
8. COLD/HOT WEATHER CONCRETE CONSTRUCTION: PROTECT CONCRETE FROM DAMAGE OR REDUCED STRENGTH IN COMPLIANCE WITH ACI 305 AND 306.
9. CONCRETE MIXES SHALL BE DESIGNED BY A CERTIFIED LABORATORY AND APPROVED BY THE STRUCTURAL ENGINEER.
10. LIMIT ALKALI-SILICA REACTION (ASR) TO 0.1% EXPANSION AT 28 DAYS IN CONCRETE MIX AT ALL EXTERIOR CONCRETE AND INTERIOR CONCRETE EXPOSED TO MOISTURE.

FOUNDATION PLAN NOTES

A. VERIFY ALL DIMENSIONS WITH ALL ARCHITECTURAL DRAWINGS AND MANUFACTURER OF HOME.

B. THE DEPTH OF FOOTING DIMENSION INDICATED ON THE PLAN IS A MINIMUM. FOUNDATION CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO INSURE THAT THESE MINIMUMS ARE SUFFICIENT FOR THE WORK.

C. STRUCTURE TO BE LEVELED AND MODULES FULLY SUPPORTED PRIOR TO THE INSTALLATION OF HOLD DOWNS, MODULAR UNITS W/OUTRIGGERS EXTENDING PAST TRANSPORT RAIL IN EXCESS OF 30 INCHES SHALL BE SUPPORTED ALONG THE PERIMETER AT NOT MORE THAN 4-0" O.C. SHIM AND BLOCK AS NECESSARY TO INTERFACE PIERS W/ FLOOR MEMBERS.

D. LATERAL HOLD DOWNS SHALL BE TIE-DOWN ENGINEERING, INC. OR APPROVED EQUAL.

E. ANCHOR SHALL BE INSTALLED AT THE LOCATION INDICATED ON THE DRAWINGS, WET SET INTO FLOWABLE FILL. THE ANCHOR HAS A MIN. ALLOWABLE HOLDING FORCE OF 3,150 POUNDS (WORKING STRESS) HORIZONTAL & VERTICAL STABILIZER DEVICE REQUIRED AT EACH ANCHOR.

F. FOR SIDEWALK AND LANDING LOCATION, SEE ARCHITECTURAL DRAWINGS.

G. THE SOIL DESIGN VALUE OF 1500 PSF PER IBC PRESCRIPTIVE VALUES, CONTINGENT THAT THE SOIL ON THE SITE PREDOMINANTLY CONSISTS OF ONE OF THE FOLLOWING: SANDY GRAVEL OR GRAVEL (GW OR GP), SANDY (SW AND SP), SILTY SAND (SM), CLAYEY SAND (SC), SILTY GRAVEL (GM), OR CLAYEY GRAVEL (GC). THESE SOIL CLASSIFICATIONS CAN BE FOUND IN TABLE 1806.2 OF CHAPTER 18 OF THE IBC. VERIFICATION OF SOIL CLASSIFICATION IS THE RESPONSIBILITY OF THE CONTRACTOR.

H. ALL FOUNDATIONS SHALL BEAR ON COMPACTED ENGINEERING FILL OR COMPETENT NATIVE SOIL SUBBASE COMPACTED TO 95% DRY DENSITY (STANDARD PROCTOR). GRADE IS DEFINED AS LOWEST ADJACENT GRADE WITHIN 5 FEET OF THE BUILDING FOR PERIMETER FOOTINGS. WHERE EXTERIOR PAVING OR CONCRETE IS DIRECTLY ADJACENT TO BUILDING, GRADE IS DEFINED AS TOP OF EXTERIOR PAVING AT LEAST 5 FEET FROM BUILDING. CONCRETE FOOTING EXCAVATIONS SHALL BE CLEAN AND FREE OF LOOSE DEBRIS OR UN-COMPACTED MATERIAL AT TIME OF CONCRETE PLACEMENT.

I. CONCRETE SLABS ON GRADE SHALL BE SUPPORTED ON A 4 INCH (MIN) LAYER OF FREE-DRAINING GRANULAR MAT (DRAINAGE FILL COURSE). THE MAT SHOULD CONSIST OF A WELL GRADED SAND AND GRAVEL MIXTURE WITH MAXIMUM 3/4-INCH CRUSHED AGGREGATE. THE GRANULAR MAT SHOULD BE COMPACTED TO NO LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698.

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PROFESSIONAL ENGINEER LICENSED 18348 STATE OF IDAHO JOSEPH EIXENBERGER

1-31-24

ASD AIA NCARB

PROJECT NAME: HUD Manufactured Home and Site Design

SHEET TITLE: FOUNDATION PLAN

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

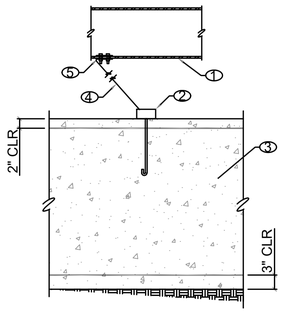
REVISION	DATE

CLIENT PROJ. NUMBER: ITD23-0375

ARCH. JOB NUMBER: 23607

SHEET ISSUED DATE: JANUARY 2024

SHEET S1.0

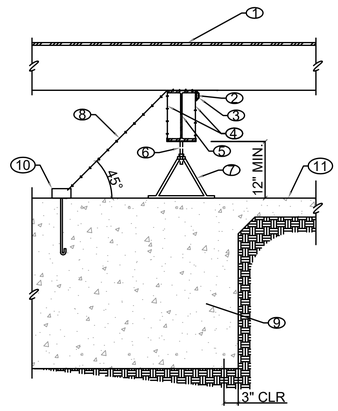


KEYNOTES:
1. MODULAR CHASSIS/FRAME
2. TYP. M1J2-12 CONC. J ANCHOR BY TIE-DOWN ENGINEERING, SEE FOUNDATION PLAN
3. CONCRETE FOOTING W/ #5 AT 10" O.C. LONGITUDINAL AT THE TOP AND BOTTOM OF FOOTING
4. TYPICAL STRAP

NOTE:
1. VERTICAL AND HORIZONTAL STABILIZER DEVICE REQUIRED AT EACH ANCHOR.

1 / S1.1 LONGITUDINAL HOLD DOWN

N.T.S.

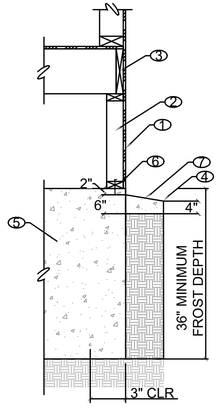


KEYNOTES:
1. MODULAR FLOOR JOIST
2. TIE DOWN BUCKLE OPPOSITE SIDE OF HOLD DOWN ANCHOR
3. METAL HOLD DOWN STRAP THROUGH BUCKLE TWO TIMES
4. METAL HOLD DOWN STRAP AROUND CHASSIS/FRAME
5. MODULAR STEEL CHASSIS/FRAME
6. MODULAR LEVELING SUPPORT JACK BEYOND
7. MODULAR LEVELING SUPPORT JACKS; MIN. CAPACITY 6,000 LBS WORKING LOAD 1'-0" FROM THE END @ 4'-0" O.C. MAX
8. METAL HOLD DOWN STRAP DOWN TO HOLD ANCHOR
9. CONCRETE FOOTING W/ #5 AT 10" O.C. LONGITUDINAL AT THE TOP AND BOTTOM OF FOOTING
10. TYP. M1J2-12 CONC. J ANCHOR BY TIE-DOWN ENGINEERING, SEE FOUNDATION PLAN
11. CONCRETE SLAB ON GRADE, SEE PLAN

NOTE:
1. VERTICAL AND HORIZONTAL STABILIZER DEVICE REQUIRED AT EACH ANCHOR.

2 / S1.1 BUCKLE-IN STRAP

N.T.S.

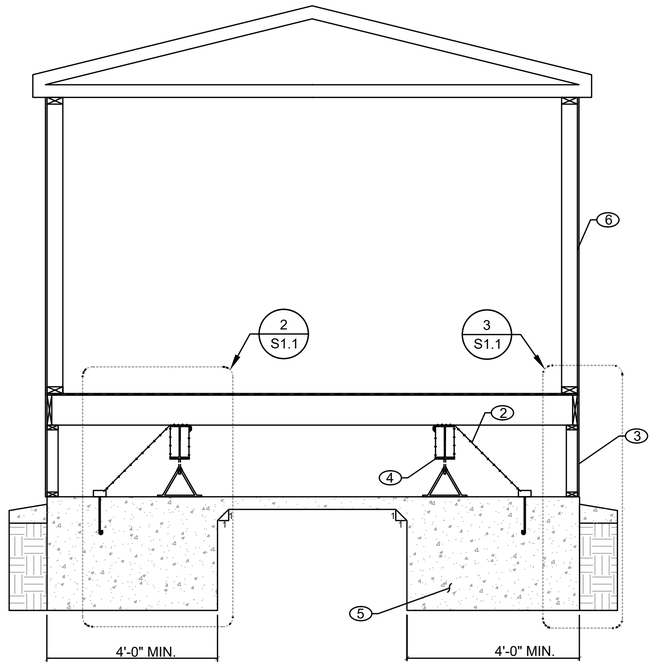


KEYNOTES:
1. INSULATED WOOD SKIRTING, BY MOBILE HOME MANUFACTURER
2. WALL FRAMING BY OTHERS (MINIMUM: 2X4 DF-L #2 SOLID FRAMING @ EA. JAMB STUD OF THE EXTERIOR MODULAR BUILDING FOR ALL OPENINGS AT 16" O.C. REMAINDER)
3. MODULAR BUILDING FRAMING BY MOBILE HOME MANUFACTURER
4. FINISH GRADE PER CIVIL
5. CONCRETE FOOTING W/ #5 AT 10" O.C. LONGITUDINAL AT THE TOP AND BOTTOM OF FOOTING
6. CONT. 2x PT SOLE PLATE W/ ATTACHMENT BY MOBILE HOME MANUFACTURER
7. SLAB DRIP EDGE

NOTE:
1. PRESERVATIVE TREAT AND WATERPROOF (PER ARCH) ANY WOOD FRAMING WITHIN 8" OF FINISH GRADE

3 / S1.1 SKIRT WALL AT FOUNDATION

N.T.S.



A FOUNDATION SECTION

N.T.S.

NOTE:
1. THE MINIMUM WIDTH OF THE CONCRETE FOOTING IS 4 FEET. A LARGER FOOTING MAY BE REQUIRED DEPENDING ON THE SPACING OF THE CHASSIS OR FRAME, THE DEPTH OF THE FRAMING, AND THE HEIGHT OF THE SUPPORT. CONTRACTOR TO COORDINATE WITH MANUFACTURER AND ADJUST THE WIDTH SUCH THAT THE ANCHOR IS EMBEDDED A MINIMUM OF 6" FROM THE EDGE AND THE SUPPORT AND SKIRT WALL ARE FULLY SUPPORTED BY THE FOUNDATION.

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SHEET: S1.1

SECTION 15010: BASIC MECHANICAL REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION-1 SPECIFICATION SECTIONS, APPLY TO THE WORK OF THIS SECTION.

1.02 SUMMARY

A. FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND SERVICES FOR ALL MECHANICAL WORK AS SPECIFIED AND INDICATED, IN ACCORDANCE WITH PROVISIONS OF CONTRACT DOCUMENTS. COMPLETELY COORDINATE WITH WORK OF ALL OTHER TRADES. ALTHOUGH SUCH WORK IS NOT SPECIFICALLY INDICATED, FURNISH AND INSTALL ALL SUPPLEMENTARY OR MISCELLANEOUS ITEMS, APPURTENANCES AND DEVICES INCIDENTAL TO OR NECESSARY FOR A SOUND, SECURE AND COMPLETE INSTALLATION.

B. FURNISH AND PROVIDE ALL NECESSARY NOTICES, OBTAIN AND PAY FOR ALL PERMITS AND PAY ALL GOVERNMENT SALES TAXES, FEES AND OTHER COSTS INCURRED IN CONNECTION WITH THE WORK. OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION FOR THE WORK.

C. DRAWINGS, USE AND INTERPRETATION:

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND EQUIPMENT, EXCEPT -WHEN SPECIFICALLY DIMENSIONED OR DETAILED.
2. FOR EXACT LOCATIONS OF BUILDING ELEMENTS, REFER TO DIMENSIONED ARCHITECTURAL AND STRUCTURAL DRAWINGS.
3. FIELD MEASUREMENTS TAKE PRECEDENCE OVER DIMENSIONED DRAWINGS.
4 PIPING AND DUCTWORK PLANS ARE INTENDED TO SHOW SIZE, CAPACITY, APPROXIMATE LOCATION, DIRECTION AND GENERAL RELATIONSHIP OF ONE WORK PHASE TO ANOTHER, BUT NOT THE EXACT DETAIL OR ARRANGEMENT.
5. FIELD VERIFY LOCATIONS AND ARRANGEMENT OF ALL EXISTING SYSTEMS AND EQUIPMENT.

1.03 QUALITY ASSURANCE

A. PERFORM ALL WORK IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.

1.04 JOB CONDITIONS

A. CAUSE AS LITTLE INTERFERENCE OR INTERRUPTION OF EXISTING UTILITIES AND SERVICES AS POSSIBLE. WORK WHICH WILL CAUSE INTERFERENCE OR INTERRUPTION SHALL BE SCHEDULED IN ADVANCE WITH CONSTRUCTION MANAGER.

B. EXAMINE CONTRACT DOCUMENTS TO DETERMINE HOW OTHER WORK WILL AFFECT EXECUTION OF MECHANICAL WORK.

C. DETERMINE AND VERIFY LOCATIONS OF ALL EXISTING UTILITIES.

D. ESTABLISH LINES AND LEVELS FOR EACH SYSTEM AND COORDINATE WITH OTHER SYSTEMS TO PREVENT CONFLICTS AND MAINTAIN PROPER CLEARANCES AND ACCESSIBILITY.

PART 2 - PRODUCTS

2.01 GENERAL

A. MATERIALS FOR MECHANICAL WORK: USE ONLY PRIME QUALITY, NEW MATERIALS, APPARATUS AND EQUIPMENT.

1. STANDARD PRODUCTS OF MANUFACTURER SPECIFIED.
2. WHERE MORE THAN ONE UNIT IS REQUIRED ON ANY ITEM, FURNISH BY THE SAME MANUFACTURER, EXCEPT WHERE SPECIFIED OTHERWISE.
3. INSTALL SAME MANUFACTURER, EXCEPT AS OTHERWISE SPECIFIED.
4. INSTALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

B. FURNISH EQUIPMENT THAT WILL OPERATE UNDER ALL CONDITIONS OF LOAD WITHOUT ANY SOUND OR VIBRATION THAT IS OBJECTIONABLE IN THE OPINION OF THE ARCHITECT/ENGINEER. VIBRATION OR NOISE CONSIDERED OBJECTIONABLE WILL BE CORRECTED BY THE SUBCONTRACTOR AT HIS EXPENSE.

C. FURNISH AND INSTALL ALL NECESSARY FOUNDATIONS, SUPPORTS, PADS, BASES AND PIERS REQUIRED FOR ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT.

D. PROVIDE ALL REQUIRED FIRE STOPPING AT PIPING AND DUCT PENETRATIONS OF FIRE RATED WALL, FLOORS, CEILINGS AND ROOFS.

2.02 MATERIALS AND EQUIPMENT

A. DELIVER MATERIALS OR EQUIPMENT TO SITE IN THE MANUFACTURER'S ORIGINAL UNOPENED, LABELED CONTAINERS AND ADEQUATELY PROTECT AGAINST MOISTURE, TAMPERING OR DAMAGE FROM IMPROPER HANDLING OR STORAGE. DO NOT DELIVER TO SITE BEFORE ITEMS ARE READY FOR INSTALLATION.

B. FACTORY APPLIED FINISHES: REPAIR AND/OR REFINISH WORK DAMAGED BY THE WORK OF THIS DIVISION, TO THE ENGINEER'S SATISFACTION. OBTAIN FINISHING MATERIALS FROM EQUIPMENT MANUFACTURER.

C. COMPLY WITH THE REQUIREMENTS FOR SUBSTITUTIONS SPECIFIED ELSEWHERE IN THIS SECTION.

2.03 MANUFACTURERS

A. QUALIFICATIONS: FIRMS REGULARLY ENGAGED IN MANUFACTURE OF PRODUCTS SPECIFIED, OF TYPES AND CAPACITIES REQUIRED, WHOSE PRODUCTS HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR NOT LESS THAN 5 YEARS, UNLESS OTHERWISE SPECIFIED.

B. SUBJECT TO COMPLIANCE WITH REQUIREMENTS SPECIFIED, PROVIDE MATERIAL OR PRODUCT FROM ONE OF THE MANUFACTURERS LISTED FOR EACH ITEM.

2.04 SUBMITTALS

A. WITHIN THIRTY DAYS AFTER AWARD OF CONTRACT, PROVIDE SIX COPIES OF A COMPLETE LIST OF ALL MATERIALS AND EQUIPMENT PROPOSED FOR THIS PROJECT.

B. INCLUDE MAKE, TYPE, MANUFACTURER'S NAME, TRADE DESIGNATION, OPERATING WEIGHT AND LOCATION OF THE CENTER OF GRAVITY (WHERE APPLICABLE) OF EACH ITEM OF EQUIPMENT IN MANUFACTURER'S CUT SHEET.

C. APPROVAL OF SUBMITTALS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY OF DEVIATIONS FROM THE PLANS OR SPECIFICATIONS, UNLESS HE HAS, IN WRITING, CALLED THE ARCHITECTS/ENGINEERS ATTENTION TO DEVIATIONS AT THE TIME OF SUBMISSION, AND OBTAINED HIS WRITTEN APPROVAL. APPROVAL OF SUBMITTALS DOES NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN SHOP DRAWINGS OR LITERATURE.

D. EQUIPMENT REQUIRING SUBMITTALS:

1. PLUMBING FIXTURES.
2. HVAC EQUIPMENT
3. GRILLES, REGISTERS, DIFFUSERS.

2.05 SUBSTITUTION

A. GENERAL:

1. MODEL, SIZE AND SCHEDULED DATA REFER TO THE MANUFACTURER INDICATED IN EQUIPMENT SCHEDULES.
2. MANUFACTURERS NAMED IN THIS SPECIFICATION ARE ACCEPTABLE, BUT THEIR EQUIPMENT, MATERIALS AND/OR METHODS ARE SUBJECT TO THE ENGINEER'S REVIEW AND ACCEPTANCE.
3. WHERE "OR EQUAL" IS MENTIONED AND MANUFACTURER, MATERIAL AND/OR METHOD OTHER THAN SPECIFIED ARE SUBMITTED FOR APPROVAL, INCLUDE PROOF OF EQUALITY. THE BURDEN OF PROOF AS TO THE EQUALITY OF ANY PROPOSED SUBSTITUTE MANUFACTURER, MATERIAL OR METHOD SHALL REST UPON THE CONTRACTOR.
4. THE ENGINEER'S DECISION SHALL BE FINAL.

B. REQUESTS FOR SUBSTITUTION REVIEW AND ACCEPTANCE SHALL BE ACCOMPLISHED BY TABLE OF COMPARISON LISTING PERTINENT FEATURES OF BOTH SPECIFIED AND PROPOSED MATERIALS, SUCH AS MATERIAL OF CONSTRUCTION, REPLACEMENT OR MAINTENANCE ACCESS, MOTOR TYPE, HORSEPOWER, VOLTAGE, PHASE, SERVICE FACTOR. REVIEW OF PROPOSED SUBSTITUTIONS WILL NOT BE MADE UNTIL RECEIPT OF SATISFACTORY COMPARISON TABULATION.

C. SUBMITTAL OF SUBSTITUTIONS SHALL BE LIMITED TO ONE PROPOSAL FOR EACH TYPE OR KIND OF ITEM, UNLESS OTHERWISE PERMITTED BY ENGINEER. IF FIRST PROPOSED PRODUCT SUBMITTAL IS REJECTED, CONTRACTOR SHALL THEN SUBMIT THE FIRST-NAMED OR SCHEDULED PRODUCT.

PART 3 - EXECUTION

3.01 GENERAL

A. COORDINATE ALL WORK WITH THE VARIOUS TRADES INVOLVED TO PROVIDE A COMPLETE AND SATISFACTORY INSTALLATION.

C. WHEN CHANGES IN LOCATION OF ANY WORK ARE REQUIRED, OBTAIN APPROVAL OF ENGINEER BEFORE MAKING CHANGE.

D. DO NOT CHANGE INDICATED SIZES WITHOUT APPROVAL OF ENGINEER.

E. PROVIDE ALL NECESSARY OFFSETS AND CROSSOVERS IN PIPING AND DUCTWORK, WHETHER INDICATED OR NOT.

F. INSTALL PIPING PARALLEL TO WALLS AND VERTICALLY PLUMB.

G. EXAMINE AREAS AND CONDITIONS UNDER WHICH MECHANICAL SYSTEM MATERIALS AND PRODUCTS ARE TO BE INSTALLED. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.

3.02 ELECTRICAL

A. ELECTRIC MOTORS REQUIRED FOR EQUIPMENT SPECIFIED IN THIS SECTION SHALL BE PROVIDED AND INSTALLED BY THIS SUBCONTRACTOR. MOTOR STARTERS, DISCONNECTS, RELAYS, PILOT LIGHTS, ETC. ARE, IN GENERAL, TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. STARTERS, RELAYS, CONTROLS, ETC. WHICH IS FACTORY ASSEMBLED INTO PACKAGED EQUIPMENT SHALL BE FURNISHED BY THIS SUBCONTRACTOR UNDER THIS SECTION OF THE SPECIFICATIONS.

B. ALL MOTORS SHALL BE PROVIDED WITH ADEQUATE STARTING AND PROTECTIVE EQUIPMENT AS SPECIFIED OR REQUIRED. MOTOR CAPACITY SHALL BE SUFFICIENT TO OPERATE DRIVEN DEVICE UNDER ALL CONDITIONS OF OPERATION AND LOAD WITHOUT OVERLOAD. MINIMUM HORSEPOWER SHALL BE AS SPECIFIED.

3.03 EXCAVATING, TRENCHING, AND BACKFILLING

A. GENERAL: LAY PIPE TO REQUIRED LINES AND GRADES. PLACE FITTINGS AND VALVES AT REQUIRED LOCATIONS AND WITH JOINTS CENTERED, SPIGOTS HOME, AND VALVE STEMS PLUMB.

1. SUBSURFACE EXPLORATIONS: WHENEVER NECESSARY TO DETERMINE LOCATION OF EXISTING UNDERGROUND UTILITY STRUCTURES, EXAMINE AVAILABLE RECORDS AND MAKE EXPLORATIONS AND EXCAVATIONS NECESSARY TO DETERMINE UTILITY LOCATIONS.
2. OBSTRUCTIONS CAUSED BY OTHER UTILITY STRUCTURES: WHERE GRADES OR ALIGNMENT OF PIPE IS OBSTRUCTED BY EXISTING UTILITY STRUCTURES SUCH AS CONDUITS, DUCTS, PIPES, BRANCH CONNECTIONS TO MAIN SEWERS, OR MAIN DRAINS, PERMANENTLY SUPPORT, RELOCATE, REMOVE, OR RECONSTRUCT OBSTRUCTION.
3. PROTECTING UNDERGROUND AND SURFACE STRUCTURES: PROVIDE TEMPORARY SUPPORT AND ADEQUATE PROTECTION AND MAINTENANCE OF UNDERGROUND AND SURFACE UTILITY STRUCTURES, DRAINS, SEWERS, AND OTHER OBSTRUCTIONS ENCOUNTERED IN PROGRESS OF THE WORK. PROTECT POLES, FENCES, TREES, AND OTHER PROPERTY UNLESS THEIR REMOVAL IS AUTHORIZED. SATISFACTORILY RESTORE ANY PROPERTY DAMAGED.
4. DEVIATIONS: MAKE NO DEVIATION FROM REQUIRED LINE OR GRADE WITHOUT WRITTEN PERMISSION.

3.04 CUTTING AND PATCHING

A. PROVIDE ALL CUTTING AND PATCHING NECESSARY TO INSTALL THE WORK SPECIFIED IN THIS SECTION.

1. PATCHING SHALL MATCH ADJACENT SURFACES.
2. NO STRUCTURAL MEMBERS SHALL BE CUT WITHOUT THE APPROVAL OF THE ARCHITECT/ENGINEER.
3. LOCATE OPENINGS AND SLEEVES TO PERMIT NEAT INSTALLATION OF PIPING, DUCTWORK AND EQUIPMENT.

3.05 INSTALLATION OF EQUIPMENT

A. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

B. PROVIDE ALL NECESSARY ANCHORING DEVICES AND SUPPORTS.

1. USE STRUCTURAL SUPPORTS SUITABLE FOR EQUIPMENT, OR AS INDICATED.
2. CHECK LOADINGS AND DIMENSIONS OF EQUIPMENT WITH SHOP DRAWINGS.
3. DO NOT CUT OR WELD TO BUILDING STRUCTURAL MEMBERS, UNLESS SPECIFICALLY INDICATED OTHERWISE.
4. PROVIDE ALL EQUIPMENT SUPPORTS NOT DETAILED ON ARCHITECTURAL AND MECHANICAL DRAWINGS.

C. VERIFY THAT EQUIPMENT WILL FIT SUPPORT LAYOUTS INDICATED.

1. WHERE SUBSTITUTE EQUIPMENT IS USED, REVISE INDICATED SUPPORTS TO FIT.
2. COORDINATE SIZE AND LOCATION OF ROOF PENETRATIONS AND WALL OPENINGS WITH WORK OF OTHER SECTIONS.

D. INSTALL RAIN HOODS AND METAL COUNTER FLASHINGS AS INDICATED AND TO MAKE ALL PENETRATIONS OF MECHANICAL WORK THROUGH WALLS AND ROOFS, WATER AND WEATHER-TIGHT. FURNISH ALL CLAMPS, WATERPROOFING MATERIAL AND LABOR NECESSARY.

E. INSTALL EQUIPMENT TO PERMIT EASY ACCESS FOR NORMAL MAINTENANCE.

1. MAINTAIN EASY ACCESS TO FILTERS, MOTORS, DRIVES, VALVES, ETC.
2. MINOR CHANGES FROM THE DRAWINGS MAY BE MADE, WITH PRIOR APPROVAL, TO ALLOW FOR BETTER ACCESSIBILITY.

F. IN MECHANICAL AREAS, COORDINATE LOCATIONS OF FLOOR DRAINS, FLOOR SINKS, ETC., WITH LOCATIONS OF EQUIPMENT AND HOUSEKEEPING PADS. LOCATE DRAINS TO PROPERLY SERVE EQUIPMENT AND TO RESULT IN ORDERLY ROUTING OF DRAIN PIPING, WHILE MINIMIZING TRIPPING HAZARDS, ETC.

3.06 INSTALLATION OF EQUIPMENT FURNISHED BY OWNER OR OTHER DIVISION

A. RECEIVE, UN-CRATE, INSPECT, MOVE IN PLACE AND INSTALL ANY OWNER SUPPLIED EQUIPMENT.

B. PROVIDE ROUGH-IN AND FINAL CONNECTIONS TO ALL EQUIPMENT REQUIRING MECHANICAL SERVICES.

C. INSTALL ALL FITTINGS, VALVES, AND OTHER ITEMS FURNISHED AS INTEGRAL PART OF EQUIPMENT, BUT SHIPPED LOOSE.

3.07 FIELD QUALITY CONTROL

A. PERFORM INDICATED TESTS TO DEMONSTRATE WORKMANSHIP, OPERATION, AND PERFORMANCE.

1. CONDUCT TESTS IN PRESENCE OF INSPECTORS OF AGENCIES HAVING JURISDICTION, AS REQUIRED.
2. FURNISH ALL LUBRICATING MATERIALS REQUIRED FOR TEST.

B. REPAIR OR REPLACE EQUIPMENT AND SYSTEMS FOUND INOPERATIVE OR DEFECTIVE AND RE-TEST.

1. IF EQUIPMENT OR SYSTEM FAILS RE-TEST, REPLACE IT WITH PRODUCTS WHICH CONFORM WITH CONTRACT DOCUMENTS.
2. CONTINUE REMEDIAL MEASURES AND RE-TESTS UNTIL SATISFACTORY RESULTS ARE OBTAINED.

3.08 ADJUST AND CLEAN

A. INSPECT ALL EQUIPMENT AND PUT IN GOOD WORKING ORDER.

B. CLEAN ALL EXPOSED AND CONCEALED ITEMS:

1. CLEAN FLOOR DRAINS, CLEANOUTS, AND PLUMBING FIXTURES.
2. CLEAN SPECIALTIES SUCH AS TRAPS AND STRAINERS.

C. EQUIPMENT AND MATERIALS: REMOVE FOREIGN MATERIALS INCLUDING DIRT, GREASE, SPLASHED PAINT, AND PLASTER, ETC. RESTORE TO ORIGINAL CONDITION AND FINISH DAMAGED ITEMS.

D. DOMESTIC WATER SYSTEMS:

1. STERILIZATION: AFTER ABOVE FLUSHING, DRAINING, AND REFILLING, STERILIZE DOMESTIC WATER SYSTEMS IN ACCORDANCE WITH REQUIREMENTS OF PUBLIC HEALTH AGENCY HAVING JURISDICTION. IF HEALTH DEPT. DOES NOT HAVE SPECIFIC REQUIREMENTS, USE FOLLOWING ALTERNATIVE.
   a. ALTERNATIVE PROCEDURE: STERILIZE DOMESTIC WATER SYSTEMS WITH 4% CHLORINE SOLUTION INJECTED INTO SYSTEM TO CONCENTRATION OF 50 PARTS PER MILLION AND ALLOW TO STAND FOR 24 HOURS. AFTER THIS PERIOD, PURGE THROUGHOUT ENTIRE STRUCTURE AT OUTLETS; REDUCE SYSTEM CHLORINE CONTENT TO LESS THAN 1 PART PER MILLION.
2. WARNING SIGNS: PROVIDE SIGNS AT OUTLETS DURING CHLORINATION.

E. GAS: AFTER TESTING OF NATURAL GAS OR PROPANE SYSTEM, AND BEFORE ANY GAS OR PROPANE IS PUT INTO LINE, BLOW OUT ENTIRE SYSTEM OF PIPING TO REMOVE SCALE AND DIRT; PURGE AIR BY FILLING SYSTEM WITH GAS.

F. ADJUSTING: ADJUST EQUIPMENT AND SYSTEM COMPONENTS AS INDICATED OR AS OTHERWISE REQUIRED TO RESULT IN INTENDED SYSTEM OPERATION. THEREAFTER, AS A RESULT OF SYSTEM OPERATION, OR AS DIRECTED, MAKE READJUSTMENTS AS NECESSARY TO REFINE PERFORMANCE AND TO EFFECT COMPLETE SYSTEM TUNEUP.

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ASID NCARB AIA
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HUD Manufactured Home and Site Design

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3.09 TESTING

A. PIPING:

1. ALL PLUMBING PIPING SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UNIFORM PLUMBING CODE, LATEST EDITION. OTHER PIPING SYSTEMS SHALL BE TESTED TO 1.5 TIMES THE OPERATING PRESSURE, FOR A MINIMUM PERIOD OF TWO HOURS. IF THE TEST PRESSURES FALLS MORE THAT 5 PERCENT DURING THE TEST PERIOD, THE LEAK SHALL BE LOCATED, REPAIRED, AND THE TEST REPEATED.
2. TEST THERMOMETERS, PRESSURE GAGES, AND WATER METERS FOR ACCURATE INDICATION; AUTOMATIC WATER FEEDERS, AIR VENTS, TRAP PRIMERS, VACUUM BREAKERS, AND OTHER SPECIALTIES FOR PROPER PERFORMANCE.

B. SYSTEMS:

1. ALL SYSTEMS, INCLUDING HEATING, VENTILATING, AIR CONDITIONING, AND PLUMBING SYSTEMS, SHALL BE TESTED AT THE COMPLETION OF THE BUILDING TO ESTABLISH THE SYSTEMS OPERATE AS SPECIFIED AND REQUIRED. TESTING SHALL BE PERFORMED AFTER AIR AND WATER BALANCING IS COMPLETED.
2. ALL CONTROLS SHALL BE CALIBRATED ACCURATELY AND ALL EQUIPMENT SHALL BE ADJUSTED FOR SATISFACTORY OPERATION. EXCESSIVE VIBRATION OR NOISE FROM ANY SYSTEM SHALL BE CORRECTED.
3. THE AIR CONDITIONING SYSTEM SHALL BE TESTED FOR SATISFACTORY OPERATION WHEN THE OUTSIDE AIR TEMPERATURE REACHES 60 DEGREES F. OR WARMER. ALL OTHER SYSTEMS SHALL BE TESTED AT BUILDING COMPLETION.
4. ALL TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE ARCHITECT/ENGINEER OR HIS REPRESENTATIVE.

C. HANGERS AND SUPPORTS:

1. WITH SYSTEMS IN NORMAL OPERATION, TEST HANGERS, SUPPORTS AND RODS TO INSURE THEY ARE PLUMB AND SUPPORTING PROPER SHARE OF LOAD. ADDITIONALLY SUPPORT SYSTEMS AND EQUIPMENT THAT SWAY, CRAWL, OR VIBRATE.

D. OTHER MATERIALS AND EQUIPMENT:

1. TEST AS SPECIFIED; AS RECOMMENDED BY EQUIPMENT MANUFACTURER; AND AS OTHERWISE NECESSARY OR DIRECTED TO ASSURE THEY ARE COMPLETE, OPERABLE, AND READY FOR USE.

3.10 BALANCING

A. PRIOR TO FINAL ACCEPTANCE BY THE OWNERS, ALL AIR SYSTEMS IN THE BUILDING SHALL BE BALANCED TO DELIVER THE QUANTITIES AS SPECIFIED OR DIRECTED. THE AIR BALANCE SHALL BE PERFORMED BY AN INDEPENDENT AGENCY SPECIALIZING IN BALANCING.

B. TEST PROCEDURES:

1. EXAMINE INSTALLED WORK AND CONDITIONS UNDER WHICH TESTING IS TO BE DONE TO ENSURE THAT WORK HAS BEEN COMPLETED, CLEANED, AND IS OPERABLE. DO NOT PROCEED WITH TESTING, ADJUSTING AND BALANCING (TAB) WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO TESTER.
2. TEST, ADJUST AND BALANCE ENVIRONMENTAL SYSTEMS AND COMPONENTS, AS INDICATED, IN ACCORDANCE WITH PROCEDURES OUTLINED IN APPLICABLE STANDARDS.
3. TEST, ADJUST AND BALANCE SYSTEM DURING SUMMER SEASON FOR AIR CONDITIONING SYSTEMS AND DURING WINTER SEASON FOR HEATING SYSTEMS, INCLUDING AT LEAST PERIOD OF OPERATION AT OUTSIDE CONDITIONS WITHIN 5 DEGREES F WET BULB TEMPERATURE OF MAXIMUM SUMMER DESIGN CONDITION, AND WITHIN 10 DEGREES F DRY BULB TEMPERATURE OF MINIMUM WINTER DESIGN CONDITION. WHEN SEASONAL OPERATION DOES NOT PERMIT MEASURING FINAL TEMPERATURES, THEN TAKE FINAL TEMPERATURE READINGS WHEN SEASONAL OPERATION DOES PERMIT.
4. PREPARE REPORT OF TEST RESULTS, INCLUDING INSTRUMENTATION CALIBRATION REPORTS, IN FORMAT RECOMMENDED BY APPLICABLE STANDARDS.
5. PATCH HOLES IN INSULATION, DUCTWORK AND HOUSINGS, WHICH HAVE BEEN CUT OR DRILLED FOR TEST PURPOSES, IN MANNER RECOMMENDED BY ORIGINAL INSTALLER.
6. MARK EQUIPMENT SETTINGS, INCLUDING DAMPER CONTROL POSITIONS, VALVE INDICATORS, FAN SPEED CONTROL LEVERS, AND SIMILAR CONTROLS AND DEVICES, TO SHOW FINAL SETTINGS AT THE COMPLETION OF TAB WORK. PROVIDE MARKINGS WITH PAINT OR OTHER SUITABLE PERMANENT IDENTIFICATION MATERIALS.
7. RETEST, ADJUST, AND BALANCE SYSTEMS SUBSEQUENT TO SIGNIFICANT SYSTEM MODIFICATIONS, AND RESUBMIT TEST RESULTS.

3.11 SYSTEMS START UP

A. STARTUP REQUIREMENTS APPLY TO CONTRACTOR AND OWNER SUPPLIED EQUIPMENT AND SYSTEMS.

B. PRIOR TO FINAL ACCEPTANCE, AT TIME AGREED TO BY THE OWNER AND ENGINEER, PUT ALL SYSTEMS INTO SATISFACTORY OPERATION.

C. AT FIRST HEATING OR COOLING SEASON FOLLOWING FINAL ACCEPTANCE, START UP SYSTEMS NOT STARTED DUE TO LACK OF SEASONAL DESIGN LOAD OR OPERATION OF THE CENTRAL SYSTEM.

D. OPERATE ALL SYSTEMS IN GOOD WORKING ORDER FOR PERIOD OF FIVE (5) WORKING DAYS.

E. PROVIDE SERVICES OF AUTHORIZED FACTORY SERVICE REPRESENTATIVE TO PERFORM START-UP AND OPERATION DEMONSTRATION SERVICES.

F. PERFORM SERVICES IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN START-UP INSTRUCTIONS. TEST CONTROL AND DEMONSTRATE COMPLIANCE WITH REQUIREMENTS. REPLACE DAMAGED OR MALFUNCTIONING CONTROLS AND EQUIPMENT.

G. MAINTENANCE AND OPERATION TRAINING:

1. AFTER THE MECHANICAL SYSTEM IS COMPLETELY INSTALLED AND OPERATIONAL, THE MECHANICAL CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO HOURS OF TRAINING AND INSTRUCTION TIME FOR THE BUILDING OWNER OR HIS REPRESENTATIVE. DURING THIS PERIOD, THE CONTRACTOR SHALL INSTRUCT THE OWNER IN THE OPERATION AND MAINTENANCE OF ALL PARTS OF THE MECHANICAL SYSTEM, USING THE O&M MANUAL WHERE APPLICABLE.

3.12 SPECIAL TOOLS

A. FURNISH TO OWNER NOT LATER THAN WHEN OWNER TAKES POSSESSION OF EQUIPMENT.

B. DEFINITION OF SPECIAL TOOLS: IDENTIFIED IN OR OTHERWISE IMPLIED BY, THE MANUFACTURER'S OPERATION AND MAINTENANCE MANUALS FOR THE FURNISHED EQUIPMENT, OR WHICH ARE OTHERWISE REQUIRED FOR THE OPERATION, WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES FOR OPERATION, ADJUSTMENT AND MAINTENANCE. SPECIAL TOOLS DO NOT INCLUDE THOSE REQUIRED FOR MAJOR REPAIRS NORMALLY DONE BY FACTORY TRAINED OR OTHERWISE SPECIALIZED SERVICE PERSONNEL, NOR DO THEY INCLUDE THOSE NORMALLY FOUND IN THE POSSESSION OF OWNER'S ON SITE MAINTENANCE PERSONNEL.

3.13 RECORD DOCUMENTS AND OPERATING AND MAINTENANCE MANUALS

A. THE CONTRACTOR SHALL PROVIDE TWO COPIES OF AN OPERATIONS AND MAINTENANCE MANUAL AT LEAST THIRTY DAYS PRIOR TO COMPLETION OF WORK. THE MANUAL SHALL BE OF THE THREE RING BINDER TYPE, ENTITLED, "OPERATION AND MAINTENANCE MANUAL," WITH THE JOB NAME AND YEAR OF COMPLETION ALSO INCLUDED. THE MANUAL SHALL INCLUDE, AS A MINIMUM:

1. LIST OF ALL EQUIPMENT WITH MANUFACTURER'S NAME, MODEL NUMBER, AND LOCAL REPRESENTATIVE, SERVICE FACILITIES AND NORMAL CHANNEL OF SUPPLY FOR EACH ITEM.
2. SYSTEM DESCRIPTION: DESCRIPTION OF START UP AND OPERATING PROCEDURES.
3. CONTROLS: DIAGRAMS AND DESCRIPTION OF OPERATION SEQUENCE OF EACH SYSTEM.
4. EQUIPMENT: MANUFACTURER'S BROCHURES, RATINGS, CERTIFIED SHOP DRAWINGS, LUBRICATION CHARTS AND DATA, PARTS LISTS WITH PART NUMBERS, AND BELT AND SHEAVE DATA. MARK EACH SHEET WITH EQUIPMENT IDENTIFICATION NUMBER AND ACTUAL INSTALLED CONDITION.
5. MATERIALS AND ACCESSORIES: MANUFACTURER'S BROCHURES, PARTS LISTS WITH PART NUMBERS AND LUBRICATION DATA WHERE APPLICABLE. MARK EACH SHEET WITH EQUIPMENT IDENTIFICATION NUMBER OR SYSTEM AND LOCATION OF INSTALLATION; AND TO SPECIFICALLY IDENTIFY WHICH OPTIONS ARE PROVIDED (IN CASE WHERE DATA SHEET SHOWS MULTIPLE OPTIONS).
6. CERTIFICATE OF FACTORY TEST AND CODE COMPLIANCE AS SPECIFIED.
7. AIR AND/OR WATER SYSTEM BALANCE REPORT AS HEREIN SPECIFIED.
8. GUARANTEE LETTER AS HEREIN SPECIFIED.
9. ANY ADDITIONAL INFORMATION REQUIRED TO ENABLE THE OWNER TO PROPERLY OPERATE AND MAINTAIN THE BUILDING MECHANICAL SYSTEM.

B. PROVIDE TWO COMPLETE SETS OF BLUELINE AS-BUILT MECHANICAL DRAWINGS.

1. THE DRAWINGS SHALL INDICATE ALL DEPARTURES FROM THE CONTRACT DRAWINGS, AND SHALL LOCATE ALL UNDERGROUND UTILITY LINES WITH DIMENSIONS FROM ESTABLISHED BUILDING LINES. MAKE ALL NOTATIONS NEAT AND LEGIBLE, WITH RED INDELIBLE PENCIL. AT THE COMPLETION OF THE WORK, THESE AS-BUILT DRAWINGS SHALL BE SIGNED AND DATED BY THE MECHANICAL CONTRACTOR, AND RETURNED TO THE ARCHITECT/ENGINEER.

3.14 GUARANTEE

A. ALL WORK FURNISHED UNDER THIS SECTION SHALL BE GUARANTEED IN WRITING TO BE FREE FROM DEFECTIVE WORK OR MATERIALS FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF THE CONTRACT. ALL REPAIRS OR REPLACEMENTS BECAUSE OF DEFECTIVE MATERIALS OR WORKMANSHIP OR NONCOMPLIANCE WITH CODE SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL FURNISH A LETTER INDICATING ABOVE GUARANTEE WITH SPACE FOR DATE OF ACCEPTANCE AND EXPIRATION OF GUARANTEE. LETTER SHALL BE INCLUDED IN O&M MANUAL.

END OF SECTION 15010

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PROFESSIONAL ENGINEER LICENSED 14844 STATE OF IDAHO BART BROOKE
ASID NCARB AIA
1-31-24

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
BASIC MECHANICAL REQUIREMENTS SPECIFICATION SECTION 15010

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION	DATE

CLIENT PROJ. NUMBER: ITD23-0375
ARCH. JOB NUMBER: 23607
SHEET ISSUED DATE: JANUARY 2024
SHEET M0.1

SECTION 15400: PLUMBING

PART 1 - GENERAL

1.01 SUMMARY

A. THIS SECTION COVERS THE WORK NECESSARY FOR THE PLUMBING SYSTEM, COMPLETE. THE MECHANICAL GENERAL PROVISIONS, SECTION15010, ARE TO BE INCLUDED AS PART OF THIS SECTION OF THE SPECIFICATIONS.

1.02 QUALITY ASSURANCE

A. THE PLUMBING SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE, ANSI STANDARDS, INTERNATIONAL MECHANICAL CODE, NFPA AND IBC, AS APPLICABLE.

PART 2 - PRODUCTS

2.01 GENERAL

A. PLUMBING FIXTURES AND EQUIPMENT SHALL BE AS LISTED ON THE DRAWINGS. IN ADDITION TO THOSE SPECIFICALLY LISTED, THE FOLLOWING MANUFACTURERS ARE APPROVED FOR BIDDING ONLY, WITH FINAL APPROVAL FOR INSTALLATION BASED ON SUBMITTAL DATA FURNISHED.

1. FIXTURES: AMERICAN STANDARD, KOHLER, ELJER, ELKAY, JUST, SUNROC, HALSEY-TAYLOR, OASIS, HAWS, CRANE, ACORN, BRADLEY.
2. SPECIALTIES: BELL & GOSSETT, CLA VAL CO., FEBCO SALES, HERSEY PRODUCTS, ITT, WATTS, J.R. SMITH
3. CARRIERS AND DRAINAGE PRODUCTS: J.R. SMITH, JOSAM, ZURN, AND WADE.
4. WATER HEATERS: BRADFORD-WHITE, RHEEM, AO SMITH, STATE AND AMERICAN.
5. INSULATION: ARMSTRONG WORLD INDUSTRIES, CERTAINTEED, KNAUF FIBER GLASS, MANVILLE PRODUCTS, OWENS-CORNING FIBERGLASS, PITTSBURGH CORNING
6. NATURAL GAS PRODUCTS: DEZURIK CORP, JENKINS BROS, LUKENHEIMER CO, NIBCO, POWELL (THE WM.) CO, ROCKWELL INTERNATIONAL, STOCKHAM VALVES AND FITTINGS, WALWORTH
7. ALL OTHER MANUFACTURERS REQUIRE PRIOR APPROVAL.

2.02 FIXTURE AND PIPING STANDARDS

A. PLUMBING FIXTURES: ANSI A112, ARI 1010, Z358.1 ANSI/ASSE 1011, 1013, 1019, PDI WH-201

B. PIPING: ASTM D2321, D1527, D2468, D2661, D2235, D2665, D3311, D2564

2.03 PLUMBING FIXTURES AND TRIM

A. ALL PLUMBING FIXTURES SHALL BE PROVIDED COMPLETE WITH ALL REQUIRED TRIM FOR A COMPLETE AND OPERATIONAL SYSTEM. ALL EXPOSED TRIM SHALL BE CHROME PLATED. ALL PIPING PENETRATIONS THROUGH FINISHED WALL SHALL BE PROVIDED WITH CHROME ESCUTCHEONS. ALL PLUMBING FIXTURES SHALL BE CAULKED AND SEALED TO SURROUNDING SURFACES.

2.04 PIPING AND FITTINGS:

A. GENERAL:

1. UNDERGROUND SANITARY SEWER AND STORM DRAIN LINES SHALL BE INSTALLED AT 1/4-INCH PER FOOT SLOPE, UNLESS OTHERWISE INDICATED. IF SUCH SLOPE IS NOT POSSIBLE DUE TO EXISTING INVERTS,APPROVAL SHALL BE OBTAINED FROM THE ARCHITECT/ENGINEER AND THE AUTHORITY HAVING JURISDICTION BEFORE ANY PIPING IS INSTALLED AT A LESSER SLOPE.
2. CONNECTIONS BETWEEN PIPING OF DISSIMILAR MATERIALS SHALL BE MADE WITH DIELECTRIC UNIONS.
3. PROVIDE STANDARD MANUFACTURED WATER HAMMER ARRESTERS AT ALL FLUSH VALVES. SIZE AND LOCATE PER MANUFACTURERS RECOMMENDATIONS. PROVIDE ACCESS PANELS FOR ACCESS TO ALL WATER HAMMER ARRESTERS.

B. DOMESTIC HOT AND COLD WATER:

1. PIPING INSIDE BUILDING ABOVE SLAB OR ABOVE GRADE IN CRAWL SPACE SHALL BE ASTM B88, TYPE"L," HARD DRAWN COPPER. FITTINGS SHALL BE ANSI/ASME B16.23 CAST BRASS, OR ANSI/ASME B16.29 WROUGHT COPPER. JOINTS SHALL BE ANSI/ASTM B32 SOLDER, GRADE 95-5, LEAD FREE.
2. PIPING UNDERGROUND WITHIN 5 FEET OF THE BUILDING LINE OR BELOW FLOOR SLAB, SMALLER THAN 4 INCHES, SHALL BE ASTM B88, TYPE "K," HARD DRAWN OR SOFT ANNEALED COPPER. FITTINGS SHALL BE ANSI/ASME B16.29 WROUGHT COPPER. JOINTS SHALL BE ANSI/ASTM B32 SOLDER, GRADE 95-5, LEAD FREE. NO JOINTS SHALL BE INSTALLED BENEATH CONCRETE FLOOR SLABS.

C. SANITARY SEWER AND VENT:

1. PIPING AND FITTINGS SHALL BE ABS, ASTM D2680 OR D2751 WITH ABS FITTINGS. JOINTS SHALL BE ASTM D2235, SOLVENT WELDED AS PER SOLVENT MANUFACTURER'S INSTRUCTIONS. ALL MAIN SEWER RISERS (1 STORY OR MORE), SHALL BE CAST IRON CISPI 301, HUBLESS, SERVICE WEIGHT, FOR PREVENTION OF NOISE TRANSMISSION. ALL PIPING PENETRATIONS THROUGH FIRE RATED WALLS, FLOORS, OR CEILINGS SHALL BE CAST IRON OR STEEL, AND SHALL BE FIRE SEALED PER LOCAL BUILDING INSPECTORS REQUIREMENTS. ALL PIPING LOCATED ABOVE CEILINGS IN AREAS USED AS RETURN AIR PLENUMS SHALL BE CAST IRON OR STEEL.

D. HANGERS AND SUPPORTS:

1. PIPE HANGERS SHALL BE PROVIDED TO ADEQUATELY SUPPORT ALL PIPING SYSTEMS. HANGERS SHALL BE VERTICALLY ADJUSTABLE TO PROVIDE FOR PROPER PITCH AND DRAINAGE. HANGERS SHALL ALLOW FOR EXPANSION AND CONTRACTION OF THE PIPING SYSTEMS.
2. HANGERS FOR PIPE SIZES 1/2 TO 4 INCHES SHALL BE ADJUSTABLE CLEVIS TYPE.
3. HANGERS FOR COLD PIPE, SIZES 6 INCHES AND OVER, SHALL BE ADJUSTABLE CLEVIS TYPE.
4. HANGERS FOR HOT PIPE 6" AND OVER, SHALL BE ADJUSTABLE STEEL YOKE, CAST IRON ROLL, DOUBLE HANGER TYPE.
5. VERTICAL PIPES SHALL BE SUPPORTED WITH STEEL RISERS CLAMPS.
6. ALL INSULATED PIPING SHALL BE PROVIDED WITH MINIMUM 18 GAUGE GALVANIZED INSULATION SHIELDS, 12 INCHES LONG, AND OVERSIZED HANGERS.
7. HANGER ROD SIZING AND SPACING FOR PIPE SHALL BE AS FOLLOWS:

A. PIPE SIZE TO 1-1/4", 3/8" ROD DIAMETER, 6-1/2 FOOT MAX SPACING

B. PIPE SIZE TO 2", 3/8" ROD DIAMETER, 10 FOOT MAX SPACING

C. PIPE SIZE TO 3", 1/2" ROD DIAMETER, 10 FOOT MAX SPACING

D. PIPE SIZE TO 6", 5/8" ROD DIAMETER, 10 FOOT MAX SPACING

E. PIPE SIZE TO 12", 7/8" ROD DIAMETER, 14 FOOT MAX SPACING

F. PVC/ABS (ALL SIZES), 3/8" ROD DIAMETER, 6 FOOT MAX SPACING

G. CAST IRON NO-HUB, 5/8" ROD DIAMETER, 6 FOOT MAX SPACING AND AT JOINTS

8. PROVIDE HANGERS WITHIN 12 INCHES OF EACH HORIZONTAL ELBOW.
9. PROVIDE HANGERS WITH MINIMUM 1-1/2 INCHES VERTICAL ADJUSTMENT.

2.05 INSULATION:

A. GENERAL:

1. ALL INSULATION SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS, AS TESTED BY ASTM E84, NFPA 255, AND UL 723, NOT EXCEEDING

A. FLAME SPREAD: 25

B. SMOKE DEVELOPED: 50

B. PIPING:

1. INSULATION SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
2. INSULATION SHALL BE CONTINUOUS THROUGH PENETRATIONS.
3. ALL INSULATION SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
4. ENTIRE LENGTH OF HOT WATER PIPING SHALL BE INSULATED. COLD WATER PIPING WITHIN EIGHT FEET OF WATER HEATER SHALL BE INSULATED.

2.06 VALVES AND STRAINERS:

A. BALL VALVES:

1. VALVES 2 INCHES AND SMALLER SHALL BE BRONZE BODY, STAINLESS STEEL BALL, TEFLON SEATS, AND LEVER HANDLE. VALVES OVER 2 INCHES SHALL BE CAST STEEL BODY, CHROME PLATED STEEL BALL TEFLON SEATS, AND LEVER HANDLE.

B. CHECK VALVES:

1. VALVES 2 INCHES AND SMALLER SHALL BE BRONZE Y-PATTERN, SWING CHECK, BRONZE DISC, 200 PSI WOG. VALVES OVER 2 INCHES SHALL BE IRON BODY, BRONZE TRIM, SWING CHECK, RENEWABLE DISC AND SEAT.

C. STRAINERS:

1. STRAINERS 3 INCHES AND SMALLER SHALL BE IRON BODY, Y-PATTERN, 20-MESH MONEL SCREEN.

PART 3 - EXECUTION

3.01 WORKMANSHIP

A. GENERAL:

1. INSTALL ALL PIPING, FIXTURES, EQUIPMENT, AND ACCESSORIES AS SHOWN, AND IN STRICT ACCORDANCE WITH THE PLUMBING LAWS, RULES, AND REGULATIONS OF THE STATE AND/OR CITY. ALL WORK SHALL BE DONE IN A NEAT AND ORDERLY FASHION, AND LEFT IN A CONDITION SATISFACTORY TO THE ARCHITECT/ENGINEER.

B. PIPING:

1. ALL PIPING SHALL BE RUN PARALLEL OR PERPENDICULAR TO ESTABLISHED BUILDING LINES. INSTALL PIPING SO AS TO ALLOW FOR EXPANSION. WASTE AND VENT PIPING OCCURRING ABOVE FLOOR SLAB SHALL BE INSTALLED TRUE AND PLUMB. EXTEND VENTS AT LEAST 1 FOOT ABOVE ROOF AND PROVIDE WATERTIGHT FLASHING SLEEVES. EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 15010 OF THESE SPECIFICATIONS.

C.FIXTURES:

1.1 INSTALL FIXTURES TRUE AND PLUMB WITH BUILDING WALLS. CAULK ALL PLUMBING FIXTURES AT JOINTS ALONG WALL, COUNTERTOPS, AND OTHER INTERSECTING SURFACE.

1.2 LOCATE FIXTURES AS SHOWN AND PER MANUFACTURER'S INSTRUCTIONS.

1.3 FURNISH ALL REQUIRED TRIM FOR FIXTURES TO PROVIDE A COMPLETE AND WORKABLE INSTALLATION.

3.02 TESTS

A. GENERAL:

1. ALL PIPING, FIXTURES, AND EQUIPMENT SHALL BE INSPECTED AND APPROVED BEFORE CONCEALING OR COVERING. ALL WORK SHALL BE TESTED AS REQUIRED BY SECTION 15010 OF THESE SPECIFICATIONS, AND SHALL BE LEAK PROOF BEFORE INSPECTION IS REQUESTED. ALL TESTS SHALL BE REPEATED IF REQUIRED BY THOSE MAKING THE INSPECTION.
2. ALL POTABLE WATER SYSTEMS SHALL BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH SECTION 15010 OF THESE SPECIFICATIONS. FOLLOWING DISINFECTION, SYSTEM SHALL BE FLUSHED AND WATER SAMPLED TO SHOW COMPLIANCE WITH REQUIREMENTS OF PUBLIC HEALTH AUTHORITY HAVING JURISDICTION. IF TESTED WATER DOES NOT MEET REQUIREMENT, DISINFECTING SHALL BE REPEATED UNTIL WATER QUALITY MEETS REQUIREMENTS.

A.FIXTURES AND EQUIPMENT:

1. FILL ALL PLUMBING FIXTURES WITH WATER AND CHECK FOR LEAKS OR RETARDED FLOW. REPAIR AS REQUIRED. ADJUST EACH PIECE OF PLUMBING EQUIPMENT AS REQUIRED TO INSURE PROPER FUNCTION. LEAVE ALL FIXTURES AND EQUIPMENT IN FIRST CLASS OPERATING CONDITION.

END OF SECTION 15400

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ASID NCARB AIA

1-31-24

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
PLUMBING SPECIFICATIONS SECTION 15400

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

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REVISION	DATE

CLIENT PROJ. NUMBER: ITD23-0375
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ABBREVIATIONS

@	AT
Ø	DIAMETER/PHASE
</L	ANGLE
#	NUMBER/POUND
°	DEGREE(D) DEPTH
(E)	EXISTING
(F)	FUTURE
(L)	LENGTH
(N)	NEW
(W)	WIDTH
ABS	ACRYLONITRILE BUTADIENE STYRENE
ABV	ABOVE
ADA	AMERICAN DISABILITIES ACT
ADJ	ADJUSTABLE
AFC	BOVE FINISHED CEILING
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AFS	ABOVE FINISH SLAB
ALT	ALTERNATE
AL	ALUMINUM
ANOD	ANODIZED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AUTO	AUTOMATIC
AUX	AUXILIARY
BDD	BACK DRAFT DAMPER
BFF	BELOW FINISH FLOOR
BFS	BELOW FINISH SLAB
BG	ELOW GRADE
BHP	BRAKE HORSEPOWER
BI	BACKWARD INCLINED
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOS	BOTTOM OF STEEL
BRD	BOARD
BRG	BEARING
BTU	BRITISH THERMAL UNIT
BOP	BOTTOM OF PIPE
BOT	BOTTOM
CA	COMBUSTION AIR
CAP	CAPACITY
CB	CATCH BASIN
CD	CONDENSATE DRAIN
CF	CUBIC FEET
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CFF	CAP FOR FUTURE
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CNT	CENTER
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
COND	CONDENSATE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS/CONTINUATION
CONTR	CONTRACTOR
CTC	CENTER TO CENTER
CV	VALVE COEFFICIENT
CDA	CLEAN DRY AIR
CFF	CAP FOR FUTURE
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CLK	CAULK(ING)
CLR	CLEAR
COTG	CLEANOUT TO GRADE
CW	DOMESTIC COLD WATER
CW/	COORDINATE WITH
CWFR	CHEMICAL WATER FEED RETURN
CWFS	CHEMICAL WATER FEED SUPPLY
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
CX	CONNECT TO EXISTING
DBL	DOUBLE
DEPT	DEPARTMENT
DET	DETAIL
DIM	DIMENSION
DISCH	DISCHARGE
DN	DOWN
DS	DOWNSPOUT
DSP	DRY STANDPIPE
DWG	DRAWING
DCBP	DOUBLE CHECK BACKFLOW PREVENTOR
DSN	DOWNSPOUT NOZZLE
E	EAST
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
ELECT	ELECTRICAL
ELEV	ELEVATION
EMERG	EMERGENCY
ENCL	ENCLOSED/ENCLOSURE
ENT	ENTERING
EQ	EQUAL
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
EWC	ELECTRIC WATER COOLER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F	FIRE SERVICE
FA	FIRE ALARM
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FH	FIRE HYDRANT
FIN	FINISH
FINS/IN	FINS PER INCH
FLA	FULL LOAD AMPS
FLASH	FLASHING
FLR	FLOOR(ING)
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPM	FEET PER MINUTE
FRPF	FIREPROOF
FT	FEET/FOOT
FURR	FURRING
FS	FLOOR SINK
FUT	FUTURE
GA	GAUGE OR GAGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GND	GROUND
GCO	GRADE CLEANOUT
GPM	GALLONS PER MINUTE
GW	GREASE WASTE
HCP	HANDICAP
HD	HEAD
HDWR	HARDWARE
HORIZ	HORIZONTAL
HP	HORSEPOWER
HR	HOUR
HT	HEIGHT
H20	WATER
HB	HOSE BIB
HGR	HOT GLYCOL RETURN
HGS	HOT GLYCOL SUPPLY
HPC	HIGH PRESSURE CONDENSATE
HORIZ	HORIZONTAL
HW	POTABLE HOT WATER SUPPLY
HWC	DOMESTIC HOT WATER RECIRC
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IDW	INDIRECT WASTE
IE	INVERT ELEVATION
IGV	INLET GUIDE VANE(S)
IMC	INTERNATIONAL MECHANICAL CODE
IN	INCH
IND	INDIRECT
INSUL	INSULATION
INT	INTERIOR
IPC	INTERNATIONAL PLUMBING CODE
IA	INSTRUMENT AIR
J-BOX	JUNCTION BOX
JST	JOIST
KW	KILOWATT
KWH	KILOWATT HOUR
L	LINED
LAV	LAVATORY
LBS	POUNDS
LF	LINEAL FEET/FOOT
LPG	LIQUEFIED PETROLEUM GAS
LRA	LOCKED ROTOR AMP
L/S	LITERS PER SECOND
LWT	LEAVING WATER TEMPERATURE
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
M	METER
MAT	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFG	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MM	MILLIMETER
MO	MOTOR OPERATED
MOCP	MAX OVERLOAD CURRENT PROTECTION
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
MC	MECHANICAL CONTRACTOR
MHT	MALE HOSE THREAD
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MSG	MANUFACTURED STANDARD GAUGE
N	NORTH
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NTS	NOT TO SCALE
NUM	NUMBER
NPW	NON-POTABLE WATER
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OH	OVERHEAD
OZ	OUNCE
ODL	OVERFLOW DRAIN LEADER
OH	OVERHEAD
OS&Y	OUTSIDE STEM & YOKE
P	PRESSURE
PH	PHASE(S)
PLBG	PLUMBING
POC	POINT OF CONNECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
P/T	PRESSURE/TEMPERATURE
PHWR	POTABLE HOT WATER RETURN
PHWS	DOMESTIC HOT WATER
PIV	POST INDICATOR VALVE
PRV	PRESSURE REDUCING VALVE
PVC	POLYVINYL CHLORIDE
PW	POTABLE WATER
RA	RETURN AIR
RAD	RADIUS
RD	ROOF DRAIN
RDL	ROOF DRAIN LEADER
RE:	REFERENCE
REFL	REFLECTED
REL	RELOCATE
REM	REMOVE
REINF	REINFORCE
RQD	REQUIRED
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
R	RISER
REFG	REFRIGERATION/REFRIGERANT
REQD	REQUIRED
RFLD	REFLECTED
RIO	ROUGH IN ONLY
RO	REVERSE OSMOSIS
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
S	SOUTH
SCHED	SCHEDULE
SECT	SECTION
SER	SERIES
SF	SQUARE FOOT
SIM	SIMILAR
SOV	SHUT OFF VALVE
SPEC	SPECIFICATION
SQ	SQUARE
SS	SANITARY SEWER
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SYS	SYSTEM
SHT	SHEET
TOS	TOP OF STEEL
TYP	TYPICAL
TPW	TEMPERED POTABLE WATER
TWR	TEMPERED WATER RETURN
TWS	TEMPERED WATER SUPPLY
UBC	UNIFORM BUILDING CODE
UFC	UNIFORM FIRE CODE
UL	UNDERWRITERS LABORATORY
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UPC	UNIFORM PLUMBING CODE
U	URINAL
UG	UNDERGROUND
V	VOLT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VTR	VENT THRU ROOF
VA	VALVE
VIF	VERIFY IN FIELD
VRV	VACUUM RELIEF VALVE
VTR	VENT THRU ROOF
W	WEST
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WP	WATERPROOF
WPD	WATER PRESSURE DROP
WT	WEIGHT
W	WEST/WASTE
WCO	WALL CLEANOUT
WH	WATERHEATER

NOTE: ALL ABBREVIATIONS LISTED ABOVE MAY NOT APPEAR ON THESE DOCUMENTS.

PLUMBING AND PIPING LEGEND

SYMBOL	DESCRIPTION
CA	COMPRESSED AIR
COND	CONDENSATE DRAIN
CDA	CLEAN DRY AIR
CO2	CARBON DIOXIDE
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CW	DOMESTIC COLD WATER
	DEMO ITEMS
GW	GREASE WASTE
HE	HELIUM
HGR	HOT GLYCOL RETURN
HGS	HOT GLYCOL SUPPLY
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HW	DOMESTIC HOT WATER
HWC	DOMESTIC HOT WATER RECIRCULATION
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
IA	INSTRUMENT AIR
IDW	INDIRECT WASTE
LPG	LIQUEFIED PETROLEUM GAS
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
MA	MEDICAL AIR
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MV	MEDICAL VACUUM
N2	NITROGEN
N2O	NITROUS OXIDE
NG	NATURAL GAS
	DIRECTION OF FLOW
	REDUCER
	PIPE DROP
	PIPE DROP
	PIPE RISE
	PIPE RISE
	VENT THRU ROOF
	WALL CLEAN-OUT
	FLOOR CLEAN-OUT
	GRADE CLEAN-OUT
	PIPE CAP
	CHECK VALVE
	DOUBLE CHECK ASSEMBLY
RP	REDUCED PRESSURE BACK FLOW ASSY.
	CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE REGULATOR
N.C.	BALL VALVE (NORMALLY CLOSED)
	BALL VALVE (NORMALLY OPEN)
	GATE VALVE
	AGA RATED GAS VALVE
	THREE WAY CONTROL VALVE
	FLEXIBLE PUMP CONNECTOR
	UNION
S	SOLENOID VALVE
	STRAINER
	PRESSURE RELIEF VALVE

SYMBOL	DESCRIPTION
	WATER HAMMER ARRESTOR
NPW	NON POTABLE WATER
ODL	OVERFLOW DRAIN LEADER
PHWR	POTABLE HOT WATER RETURN
PHWS	POTABLE HOT WATER SUPPLY
PW	POTABLE WATER
RDL	ROOF DRAIN LEADER
SD	STORM DRAIN
SS	SANITARY SEWER
TPW	TEMPERED POTABLE WATER
TWR	TEMPERED WATER RETURN
TWS	TEMPERED WATER SUPPLY
VENT	VENT
	THERMOMETER
	CIRCUIT SETTER
	PRESSURE GAUGE
	HOSE BIBB
	IN-LINE PUMP
	IN-LINE PUMP
	QUICK DISCONNECT
	BREAK LINE
	STEAM VALVE
	BUTTERFLY VALVE
	BALANCE VALVE
	DIAPHRAGM VALVE
	DOWNSPOUT NOZZLE
	FLOOR DRAIN ROUND OR SQUARE
	FLOW METER
	FLOW SWITCH
	FLOOR SINK
	FLOW VALVE
	GAS METER
	GLOBE VALVE
	INLINE TEMPERATURE GAUGE
	PLUG VALVE
	OUTSIDE STEM AND YOKE
	RECIRC PUMP
	TEMPERATURE CONTROL VALVE
	THERMO WELL
	EXPANSION TANK
	ROOF DRAIN
	OVERFLOW DRAIN
	VERTICAL VALVE
	VACUUM RELIEF VALVE
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	POINT OF CONNECTION TO EXISTING

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PROFESSIONAL ENGINEER LICENSED 14844 STATE OF IDAHO BART BROOKE — AIA NCARB ASID

1-31-24

HUD Manufactured Home and Site Design

PROJECT NAME:

SHEET TITLE:

GENERAL NOTES AND LEGEND

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION	DATE

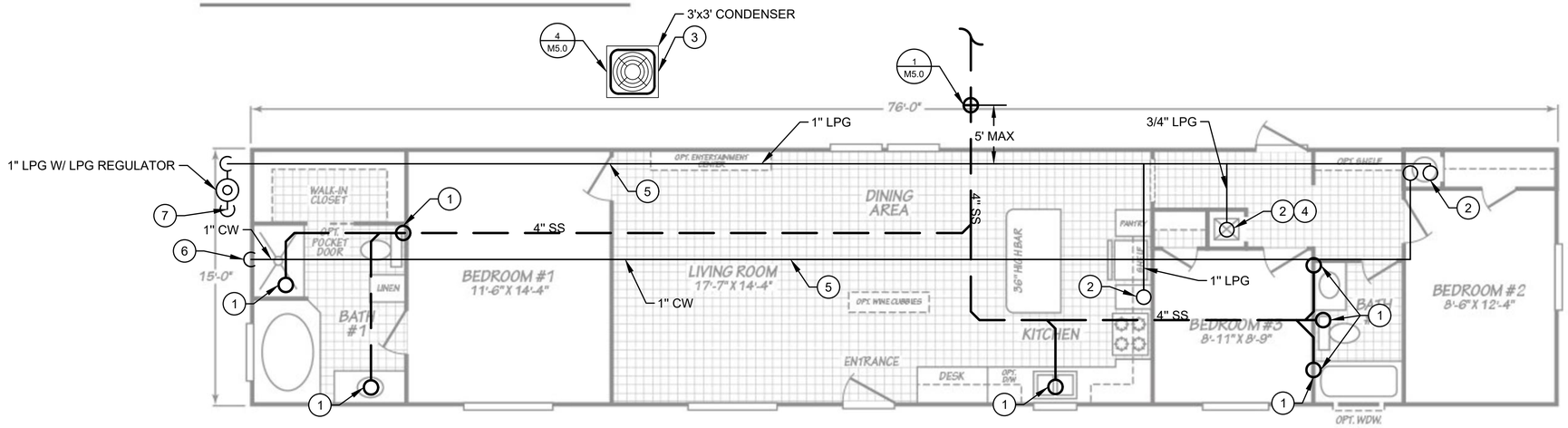
CLIENT PROJ. NUMBER: ITD23-0375

ARCH. JOB NUMBER: 23607

SHEET ISSUED DATE: JANUARY 2024

SHEET M1.0

BROADMORE SERIES



1 M2.0 PLUMBING & HVAC PLAN
SCALE: NTS

KEYNOTES:

1. ALL PLUMBING FIXTURES ARE PLUMBED WITHIN THE BUILDING AND DROPS ARE PROVIDED TO CONNECT PER MANUFACTURED HOME INSTALLATION MANUAL.
2. ALL LPG APPLIANCES ARE INSTALLED AND PLUMBED WITHIN MANUFACTURED HOME. CONTRACTOR TO CONNECT TO QUICK DISCONNECTS PER MANUFACTURED HOME INSTALLATION INSTRUCTIONS.
3. CONDENSING UNIT INSTALL ON 3'x3' CONCRETE PAD. ROUTE REFRIGERATION UNITS UNDER UNIT TO FAN COIL UNIT IN BUILDING PER MANUFACTURER'S REQUIREMENTS.
4. EXTEND CONDENSATION OUT THE BUILDING AND TERMINATE AT AN APPROVED LOCATION PER MANUFACTURED HOME INSTALLATION MANUAL.
5. SUPPORT CW/LPG LINES UNDER JOIST OF MOBILE HOME TIGHT TO INSULATION. INSULATE 1" CW LINE W/ 1-1/2" NEOPRENE INSULATION AND WRAP WITH SELF REGULATING HEAT TAPE.
6. CONNECT TO WATER LINE. SEE CIVIL SHEETS FOR CONNECTION LOCATION.
7. CONNECT TO LPG LINE. SEE CIVIL SHEETS FOR CONNECTION LOCATION AND ROUTING TO TANK.

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PROFESSIONAL ENGINEER LICENSED 14844 STATE OF IDAHO BART BROOKE — ASID NCARB AIA

1-31-24

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
PLUMBING NEW SITE PLAN

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

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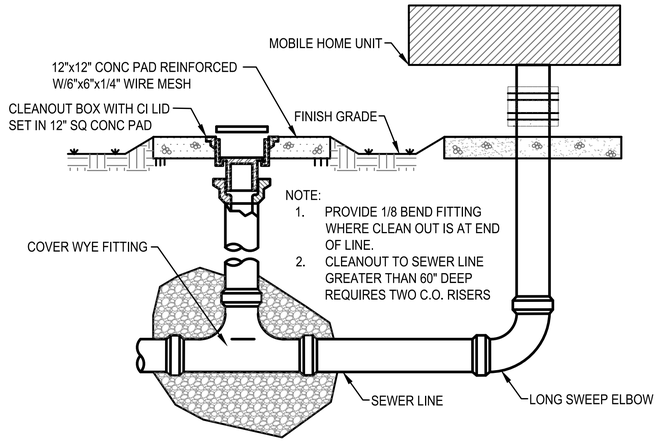
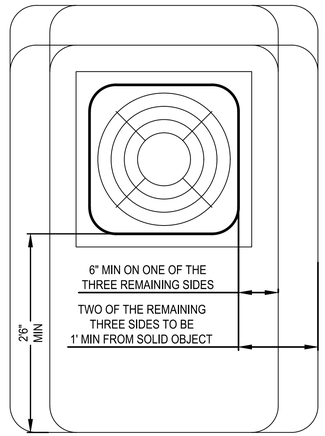
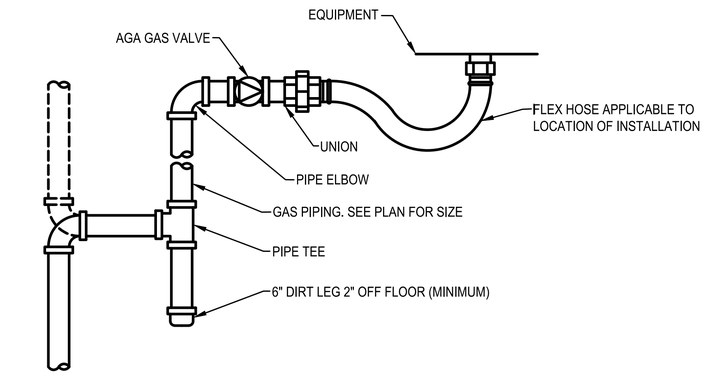
REVISION	DATE

CLIENT PROJ. NUMBER:	ITD23-0375
ARCH. JOB NUMBER:	23607
SHEET ISSUED DATE:	JANUARY 2024
SHEET	M2.0

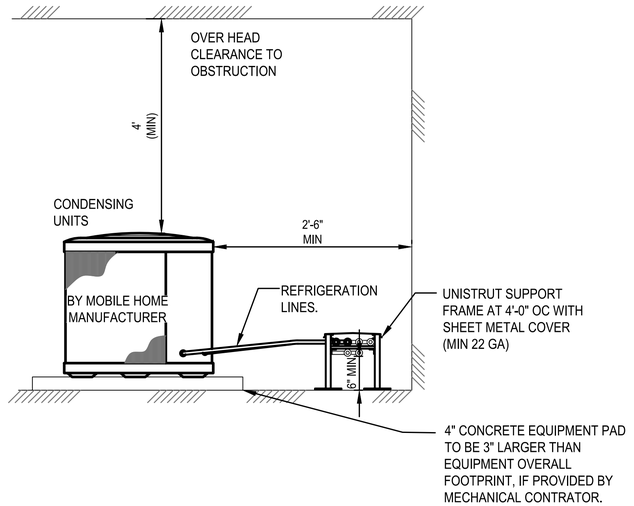


1 M5.0 GRADE CLEAN OUT
SCALE: NTS

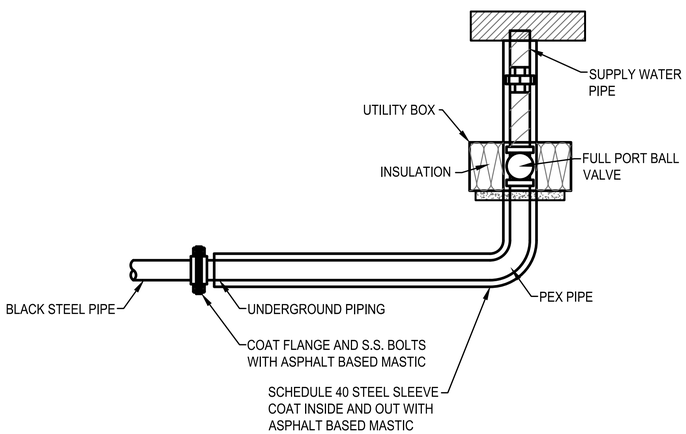




2 M5.0 GAS CONNECTION DETAIL
SCALE: NTS



4 M5.0 CONDENSING UNIT DETAIL
SCALE: NTS



3 M5.0 BELOW FOUNDATION CRAWL ENTRANCE
SCALE: NTS

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PROFESSIONAL ENGINEER LICENSED 14844 STATE OF IDAHO BART BROOKE
ASID NCARB AIA
1-31-24

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
PLUMBING DETAILS

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION	DATE

CLIENT PROJ. NUMBER: ITD23-0375
ARCH. JOB NUMBER: 23607
SHEET ISSUED DATE: JANUARY 2024
SHEET M5.0

POWER SYSTEM DEVICE SYMBOLS

- DUPLEX OUTLET. +18" AFF UNO.
- FOURPLEX OUTLET. +18" AFF UNO.
- GFI OUTLET. +18" AFF UNO.
- GFI OUTLET. ABOVE COUNTER
- FOURPLEX GFI OUTLET. +18" AFF UNO.
- DEDICATED SIMPLEX GFCI OUTLET. +18" AFF UNO.
- EQUIPMENT CONNECTION
- TL 120V TWIST LOCK RECEPTACLE.
- T TRANSFORMER.
- J JUNCTION BOX.
- FLUSH MOUNTED PANELBOARD/ENCLOSURE.
- F FUSED DISCONNECT SWITCH. SIZE AS INDICATED, NEMA 1 UNO, 3 POLE UNO.
- NON-FUSED DISCONNECT SWITCH. SIZE AS INDICATED, NEMA 1 UNO, 3 POLE UNO.

CIRCUIT WIRING SYMBOLS

- CONDUIT STUBBED OR SLEEVE, CAPPED, AND MARKED WITH PULL CORD
- CIRCUIT CONCEALED IN CEILING OR WALL. 3/4"C-2#12,1#12G UNO.
- CIRCUIT CONCEALED IN FLOOR OR UNDERGROUND. 3/4"C-2#10,1#10G UNO.

RACEWAY SIZE — 3/4"C
CONDUCTOR QUANTITY — 2#12:C-1 — CONDUCTOR SIZE, CIRCUIT NUMBER, PANEL
GROUNDING CONDUCTOR SIZE — 1#12:GND

- #### CONDUIT AND WIRE SIZE CALLOUT.

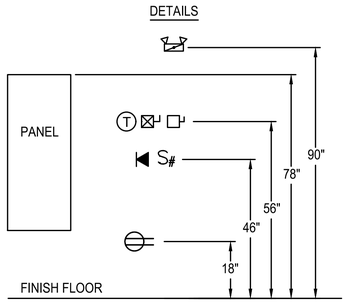
ONE-LINE DIAGRAM SYMBOLS

- PANEL ****** BRANCH PANEL.
- A CIRCUIT BREAKER. SIZE AND TYPE AS SPECIFIED
- M METER AND BASE
- SERVICE GROUND. GROUND PER NEC ARTICLE 250
- TRANSFORMER

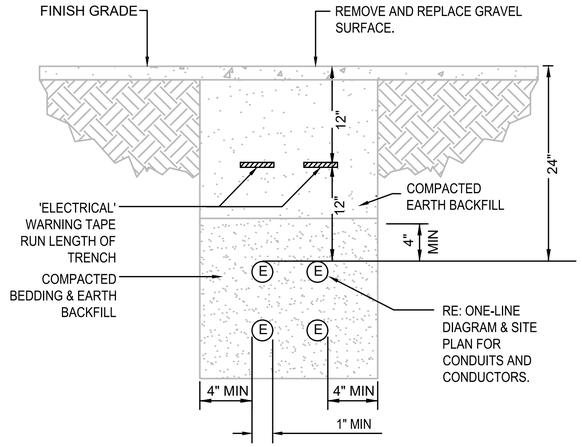
1. COLOR CODE WIRES AS FOLLOWS:

CONDUCTORS	120/208V	480/277V
PHASE A	BLACK	BROWN
PHASE B	RED	ORANGE
PHASE C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
GROUND	GREEN	GREEN

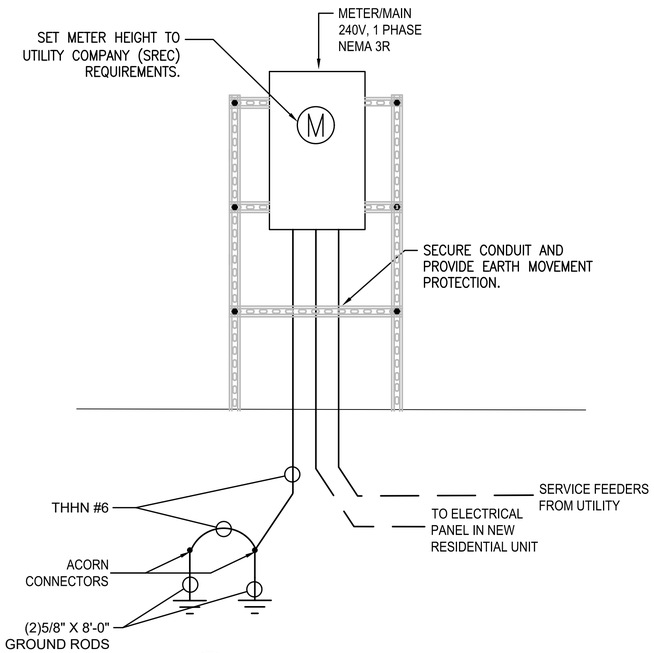
2. ELECTRICAL DEVICES AND LINEWORK ARE SHOWN BOLD FOR NEW, BOLD/DASHED FOR DEMO & RELOCATED AND MEDIUM/DASHED FOR EXISTING.
3. DIMENSIONED LENGTHS SHALL TAKE PRECEDENCE OVER SCALED LENGTHS.
4. FURNISH AND INSTALL A COMPLETE ELECTRICAL SYSTEM AS DEPICTED FROM THE PLANS AND SPECIFICATIONS. COMPLETE AS NOTED OR IMPLIED, NOT LIMITED TO WHAT IS SHOWN.
5. COORDINATE ALL DEVICE/EQUIPMENT LOCATIONS AND SPECIFIC REQUIREMENTS WITH MECHANICAL TRADE PRIOR TO ROUGH-IN.



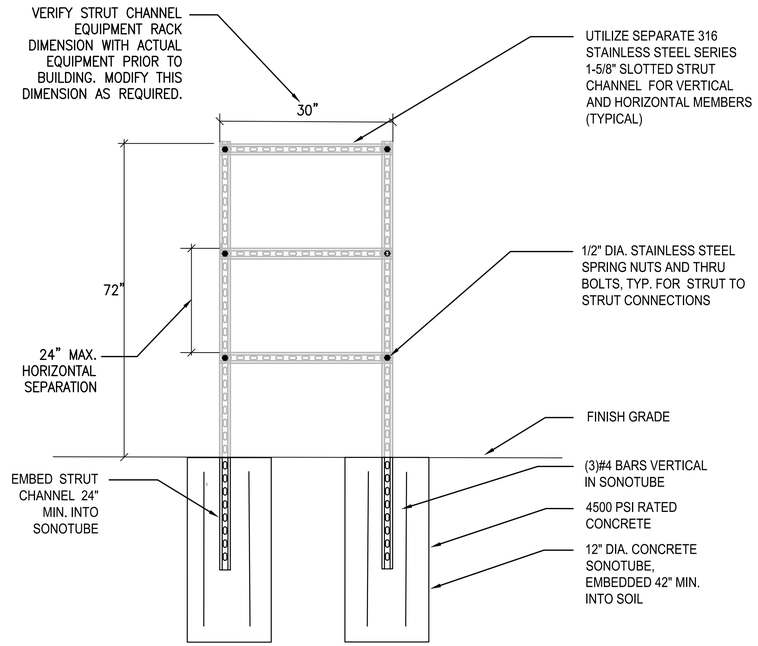
1 E0.0 TYPICAL HEIGHTS DETAIL
SCALE: NTS



2 E0.0 TRENCHING DETAIL
SCALE: NTS



3 E0.0 METER/MAIN RACK ELEVATION
SCALE: NTS



4 E0.0 METER/MAIN RACK DETAIL
SCALE: NTS

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PROFESSIONAL ENGINEER LICENSED 17578 STATE OF IDAHO PHILO V CARTER — ASID AIA NCARB
1-31-24

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
ELECTRICAL COVER

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION	DATE

CLIENT PROJ. NUMBER: ITD23-0375
ARCH. JOB NUMBER: 23607
SHEET ISSUED DATE: JANUARY 2024
SHEET E0.0

ELECTRICAL SHEET SPECIFICATIONS

PART 1 – GENERAL

1.1 SCOPE OF WORK

FURNISH AND INSTALL ALL MATERIALS AND EQUIPMENT AND PROVIDE ALL ASSOCIATED LABOR REQUIRED AND NECESSARY TO COMPLETE THE WORK INTENDED BY OR INFERRED FROM THIS SHEET SPECIFICATION AND DRAWING PACKAGE, AND ALL OTHER WORK AND OR MISCELLANEOUS ITEMS, NOT SPECIFICALLY MENTIONED, BUT REASONABLY INFERRED FOR A COMPLETE INSTALLATION, INCLUDING ALL ACCESSORIES AND APPURTENANCES REQUIRED FOR TESTING OF THE SYSTEM. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS THAT ALL SYSTEMS BE COMPLETE AND READY FOR OPERATION. THIS PROJECT INCLUDES GENERAL POWER, LIGHTING, AND COMMUNICATIONS SYSTEM RACEWAY. FIRE ALARM SYSTEM, IF REQUIRED, IS TO BE DESIGN/BUILD BY ELECTRICAL CONTRACTOR. COMMUNICATIONS SYSTEM CABLING AND HEAD-END EQUIPMENT IS BY OWNER.

1.2 CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL COMPLY WITH LATEST RULES, CODES AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO THE MOST CURRENT ADOPTED VERSIONS OF OSHA, THE NATIONAL ELECTRICAL CODE, INTERNATIONAL BUILDING AND FIRE CODES, NFPA, AND OTHER APPLICABLE STATE AND LOCAL CODES, LAWS AND REGULATIONS. CODE COMPLIANCE IS MANDATORY. NOTHING IN THESE DRAWINGS AND SPECIFICATIONS PERMITS WORK NOT CONFORMING TO THESE CODES. WHERE WORK IS SHOWN TO EXCEED MINIMUM CODE REQUIREMENTS, COMPLY WITH DRAWINGS AND SPECIFICATIONS.

1.3 LICENSE, FEES AND PERMITS

ELECTRICAL CONTRACTOR IS TO ARRANGE FOR REQUIRED INSPECTIONS AND PAY ALL LICENSE, PERMIT AND INSPECTION FEES.

1.4 CONDITIONS AT SITE

VISIT TO SITE IS REQUIRED OF ALL BIDDERS PRIOR TO SUBMISSION OF BID. ALL BIDDERS WILL BE HELD TO HAVE FAMILIARIZED THEMSELVES WITH ALL DISCERNIBLE CONDITIONS AND NO EXTRA PAYMENT WILL BE ALLOWED FOR WORK REQUIRED BECAUSE OF THESE CONDITIONS, WHETHER SPECIFICALLY MENTIONED OR NOT. LINES OF OTHER SERVICES THAT ARE DAMAGED AS A RESULT OF THIS WORK SHALL PROMPTLY BE REPAIRED AT NO EXPENSE TO THE OWNER TO COMPLETE SATISFACTION OF THE OWNER.

1.5 SAFETY

THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. CONTRACTOR SHALL HAVE AN ESTABLISHED SAFETY PLAN THAT ALL EMPLOYEES ARE TRAINED ON.

1.6 GUARANTEE

GUARANTEE THE INSTALLATION FREE FROM DEFECTS OF WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER DATE OF CERTIFICATE OF FINAL PAYMENT AND PROMPTLY REMEDY ANY DEFECTS DEVELOPING DURING THIS PERIOD, WITHOUT CHARGE.

1.7 SUBSTITUTIONS

WHEREVER POSSIBLE, MORE THAN ONE MANUFACTURER HAS BEEN LISTED FOR VARIOUS ITEMS OF EQUIPMENT, ANY ONE OF WHICH WILL BE ACCEPTABLE. BASE THE BID ON USE OF MATERIALS SPECIFIED. IF, AFTER AWARD OF THE CONTRACT, A SUBSTITUTE IS PROPOSED, THE REQUEST FOR PERMISSION TO SUBSTITUTE SHALL BE ACCOMPANIED WITH A STATEMENT OF THE AMOUNT OF MONEY TO BE RETURNED TO THE CONTRACT IF THE SUBSTITUTION IS PERMITTED. THE OWNER IS THE SOLE JUDGE OF ACCEPTABILITY OF PROPOSED SUBSTITUTIONS, IF A SUBSTITUTE ITEM IS PERMITTED, AND ANY REDESIGN EFFORT IS THEREBY NECESSITATED, THE REQUIRED REDESIGN SHALL BE AT THE CONTRACTOR'S EXPENSE.

1.8 SHOP DRAWINGS AND MATERIALS LISTS

SUBMIT TO THE OWNER, SEVEN (7) COPIES OF COMPLETE SHOP DRAWINGS AND MATERIALS LISTS FOR REVIEW WITHIN FOURTEEN (14) DAYS AFTER AWARD OF CONTRACT, ALL PROPOSED DEVIATIONS FROM SPECIFICATIONS MUST BE CLEARLY LISTED UNDER A PROMINENT HEADING ENTITLED "DEVIATIONS".

1.9 WORKMANSHIP

ONLY QUALITY WORKMANSHIP WILL BE ACCEPTED. HAPHAZARD OR POOR INSTALLATION PRACTICE WILL BE CAUSE FOR REJECTION OF WORK.

1.10 COORDINATION

COORDINATE WORK WITH OTHER TRADES TO AVOID CONFLICT AND TO PROVIDE CORRECT ROUGH-IN AND CONNECTION FOR EQUIPMENT FURNISHED BY OTHER TRADES THAT REQUIRE ELECTRICAL CONNECTIONS. VERIFY EQUIPMENT DIMENSIONS AND REQUIREMENTS WITH PROVISIONS SPECIFIED UNDER THIS SECTION. CHECK ACTUAL JOB CONDITIONS BEFORE FABRICATING WORK. REPORT NECESSARY CHANGES IN TIME TO PREVENT NEEDLESS WORK AND OR DELAYS.

1.11 CUTTING AND PATCHING

ALL CUTTING AND PATCHING REQUIRED FOR WORK OF THIS DIVISION IS INCLUDED HEREIN. COORDINATION WITH GENERAL CONTRACTOR AND OTHER TRADES IS IMPERATIVE.

1.12 SITE CLEANUP

A. AFTER ALL OTHER WORK HAS BEEN ACCOMPLISHED, CLEAN ALL EXPOSED CONDUIT, FIXTURES, EQUIPMENT AND SUPPORTS. TOUCH UP PAINT ON ANY EQUIPMENT SCRAPED OR SCRATCHED DURING CONSTRUCTION. DAMAGED EQUIPMENT CAUSED BY THIS CONTRACTOR WILL BE REPLACED.

B. LEAVE ALL AREAS INVOLVING ELECTRICAL WORK IN A CONDITION SATISFACTORY TO THE OWNER. REMOVE ALL CRATES, CARDBOARD, PACKING MATERIAL, WASTE MATERIAL, AND OTHER DEBRIS LEFT OVER FROM CONSTRUCTION DAILY.

PART 2 – PRODUCTS

2.1 MATERIAL APPROVAL

ALL MATERIALS MUST BE NEW AND BEAR U.L. LABEL. MATERIALS THAT ARE NOT COVERED BY UL TESTING STANDARDS SHALL BE TESTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY OF A GOVERNMENTAL AGENCY APPROVED BY THE AUTHORITY HAVING JURISDICTION.

2.2 WIRES AND CABLES

A. CONDUCTORS FOR 600V SYSTEMS AND BELOW SHALL BE STRANDED COPPER (UNLESS NOTED OTHERWISE), #12 AWG MINIMUM.

B. INSULATION SHALL BE THWN FOR WET LOCATIONS AND THHN FOR DRY LOCATIONS.

2.3 OUTLET BOXES, JUNCTION AND PULL BOXES

A. OUTLET BOXES SHALL BE GALVANIZED OR CADMIUM PLATED STEEL SIZED AS PER N.E.C. OR AS NOTED. UTILIZE RESIDENTIAL-GRADE PLASTIC HANGER BOXES FOR NETWORK/COMMUNICATIONS CONNECTION POINTS. USE FOUR (4) INCH SQUARE OCTAGON BOX FOR FIXTURES AND TILE TYPE DEVICE BOXES.

2.4 WIRING DEVICES

A. PROVIDE AND INSTALL ALL WIRING DEVICES WITH COVERPLATES AS NOTED ON THE PLANS. DEVICES AND COVER PLATES SHALL MATCH THE EXISTING COLOR AND TYPE.

B. DEVICES: WALL SWITCHES AND CONVENIENCE OUTLETS SHALL BE RATED FOR 20-AMP, 125-VOLT (NEMA 5-20 ANSI C73.12) SPECIFICATION GRADE DEVICES EXCEPT AS NOTED. RESIDENTIAL GRADE DEVICES ARE NOT PERMITTED.

C. PROVIDE FACTORY-FABRICATED WIRING DEVICES, IN TYPES, AND ELECTRICAL RATINGS FOR APPLICATIONS INDICATED AND COMPLYING WITH NEMA STDS. PUB. NO. WD1.

D. PROVIDE WIRING DEVICES (OF PROPER VOLTAGE RATING) AS FOLLOWS:

MFGR	C.O.'S	1-POLE	3-WAY	4-WAY	W/PILOT
HUBBELL	5362 L	1221 L	1223 L	1234 L	1221-P1 L
P&S	5362 L	20AC1 L	20AC3 L	20AC4 L	20AC1-CPL
LEVITON	5362 L	1223 L	1223 L	1224 L	

E. COVER PLATES: ALL DEVICES SHALL HAVE COVERPLATES. THEY SHALL HAVE A PLAIN FLAT SURFACE WITH BEVELED EDGES COMPATIBLE WITH THE DEVICE. THE COVER PLATES IN THE SHOP, PARTS, TOOL ROOM AND FIRE RISER ROOM SHALL BE STAINLESS STEEL. COVER PLATES IN ALL OFFICE TYPE AREAS, SHOWROOM, RESTROOM AND HALLWAYS SHALL BE HIGHLY IMPACT RESISTANT (NYLON OR LEXAN) AND SHALL MATCH THE COLOR OF THE ASSOCIATED DEVICE.

F. EMPTY BOXES: SHALL BE COVERED WITH MATCHING COVERPLATES. PROVIDE HARDWARE AS NEEDED.

G. EXTERIOR DEVICES SHALL BE 20A GFCI TYPE WITH WATERPROOF HIGHLY IMPACT RESISTANT CLEAR WHILE IN USE TYPE COVER.

2.5 WIRE CONNECTORS

A. FOR WIRE SIZES #8 AWG AND SMALLER: INSULATED PRESSURE TYPE (WITH LIVE SPRING) RATED 105°C, 600V, FOR BUILDING WIRING AND 1000V IN FIXTURES, SCOTCHLOK OR IDEAL.

B. FOR WIRE SIZES #6 AWG AND LARGER: T&B OR EQUIVALENT COMPRESSION TYPE WITH 3M #33+ OR PLYMOUTH "SLIPKNOT GREY" TAPE INSULATION.

2.6 PANELBOARD

PANELBOARDS SHALL BE AS MANUFACTURED BY SQUARE D, GENERAL ELECTRIC, SIEMENS, OR EATON/CUTLER HAMMER. PROVIDE PANELBOARDS AS INDICATED ON SCHEDULES, WITH THE FOLLOWING FEATURES: TINNED ALUMINUM BUS (98 PERCENT CONDUCTIVITY), MECHANICAL-TYPE MAIN AND NEUTRAL LUGS, NEUTRAL BUS RATED 100 PERCENT OF PHASE BUS, GROUND BUS BONDED TO ENCLOSURE, BOLT-ON MOLDED-CASE THERMAL-MAGNETIC BREAKERS.

2.7 RACEWAYS

A. OUTDOORS:

EXPOSED: RIGID STEEL OR INTERMEDIATE METAL CONDUIT
CONCEALED: RIGID STEEL OR INTERMEDIATE METAL CONDUIT
UNDERGROUND: RIGID NON-METALLIC CONDUIT
TO VIBRATING EQUIPMENT: LIQUID-TIGHT FLEXIBLE METAL CONDUIT

B. INDOORS:

EXPOSED: ELECTRICAL METALLIC TUBING, RIGID STEEL CONDUIT, PVC-COATED RIGID STEEL CONDUIT
CONCEALED: ELECTRIC METALLIC TUBING, METAL CLAD (WHERE ALLOWED BY AHJ)
DAMP OR WET LOCATIONS: RIGID STEEL CONDUIT
TO VIBRATING EQUIPMENT: FLEXIBLE METAL CONDUIT

PART 3 – EXECUTION

3.1 – GENERAL

A. ELECTRIC SYSTEM LAYOUTS INDICATED ON THE DRAWINGS ARE GENERALLY DIAGRAMMATIC, BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT.

B. CONSULT ALL OTHER DRAWINGS. VERIFY SCALES AND REPORT ANY DIMENSIONAL DISCREPANCIES OR OTHER CONFLICTS TO ARCHITECT BEFORE SUBMITTING BID.

C. ALL HOME RUNS ARE INDICATED AS STARTING FROM THE DEVICE NEAREST THE PANEL AND CONTINUING IN THE GENERAL DIRECTION OF THAT PANEL. CONTINUE SUCH CIRCUITS TO THE PANEL AS THOUGH THE ROUTES WERE COMPLETELY INDICATED.

D. AVOID CUTTING AND BORING HOLES THROUGH STRUCTURE OR STRUCTURAL MEMBERS WHEREVER POSSIBLE. OBTAIN PRIOR APPROVAL OF ARCHITECT AND CONFORM TO ALL STRUCTURAL REQUIREMENTS WHEN CUTTING OR BORING THE STRUCTURE IS NECESSARY AND PERMITTED.

3.2 – ELECTRICAL GROUNDING

GROUND ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC ARTICLE 250. IN ADDITION PROVIDE A SEPARATE GROUND WIRE FOR ALL FEEDERS AND BRANCH CIRCUITS.

3.3 – ELECTRICAL EQUIPMENT INSTALLATION

A. HEAD ROOM MAINTENANCE: IF MOUNTING HEIGHTS OR OTHER LOCATION CRITERIA ARE NOT INDICATED, ARRANGE AND INSTALL COMPONENTS AND EQUIPMENT TO PROVIDE THE MAXIMUM POSSIBLE HEADROOM.

B. MATERIALS AND COMPONENTS: INSTALL LEVEL, PLUMB, AND PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, UNLESS OTHERWISE INDICATED.

C. EQUIPMENT: INSTALL TO FACILITATE SERVICE, MAINTENANCE, AND REPAIR OR REPLACEMENT OF COMPONENTS. CONNECT FOR EASE OF DISCONNECTING, WITH MINIMUM INTERFERENCE WITH OTHER INSTALLATIONS.

D. RIGHT OF WAY: COORDINATE INSTALLATION OF ELECTRICAL DEVICES WITH OTHER TRADES.

3.4 – RACEWAY AND CABLE INSTALLATION

RACEWAY:

A. ABOVE GRADE: RIGID STEEL OR IMC IN WET LOCATIONS, WHERE SUBJECT TO MECHANICAL DAMAGE AND IN CONCRETE OR BLOCK WALLS, EMT IN OTHER LOCATIONS WHERE PERMITTED BY CODE. METAL CLAD ONLY WHERE ALLOWED BY LOCAL AUTHORITY HAVING JURISDICTION.

B. CONCEAL RACEWAYS AND CABLES WITHIN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.

C. INSTALL RACEWAYS AND CABLES AT LEAST SIX (6) INCHES AWAY FROM PARALLEL RUNS OF FLUES AND STEAM OR HOT-WATER PIPES. LOCATE HORIZONTAL RACEWAY RUNS ABOVE WATER AND STEAM PIPING.

D. USE TEMPORARY RACEWAY CAPS TO PREVENT FOREIGN MATTER FROM ENTERING.

E. MAKE CONDUIT BENDS AND OFFSETS SO INSIDE DIAMETER IS NOT REDUCED. KEEP LEGS OF BENDS IN THE SAME PLANE AND STRAIGHT LEGS OFFSETS PARALLEL, UNLESS OTHERWISE INDICATED.

F. USE RACEWAY FITTINGS AND CABLE FITTINGS COMPATIBLE WITH RACEWAYS AND CABLES AND SUITABLE FOR THIS APPLICATION AND LOCATION.

G. INSTALL RACEWAYS EMBEDDED IN SLABS IN MIDDLE THIRD OF SLAB THICKNESS WHERE PRACTICAL, AND LEAVE AT LEAST 1-INCH OF CONCRETE COVER.

H. SECURE RACEWAYS TO REINFORCING RODS TO PREVENT SAGGING OR SHIFTING DURING CONCRETE PLACEMENT.

I. SPACE RACEWAYS LATERALLY TO PREVENT VOIDS IN CONCRETE.

J. INSTALL CONDUIT LARGER THAN 1-INCH TRADE SIZE PARALLEL TO OR AT RIGHT ANGLES TO MAIN REINFORCEMENT. WHERE CONDUIT IS AT RIGHT ANGLES TO REINFORCEMENT, PLACE CONDUIT CLOSE TO SLAB SUPPORT.

K. TRANSITION FROM NONMETALLIC TUBING TO RIGID STEEL CONDUIT, OR IMC BEFORE RISING ABOVE FLOOR.

L. MAKE EXPOSED BENDS FOR BANKED RUNS FROM SAME CENTERLINE IN ORDER THAT BENDS ARE PARALLEL. USE FACTORY ELBOWS ONLY WHERE ELBOWS CAN BE INSTALLED PARALLEL; OTHERWISE, PROVIDE FIELD BENDS FOR EXPOSED PARALLEL RACEWAYS.

CABLES:

A. INSTALL PULL WIRES IN EMPTY RACEWAYS. USE NO. 14 AWG ZINC-COATED STEEL OR MONOFILAMENT PLASTIC LINE WITH NOT LESS THAN 200-LB TENSILE STRENGTH. LEAVE AT LEAST 12-INCHES OF SLACK AT EACH END OF PULL WIRE.

B. INSTALL TELEPHONE AND SIGNAL SYSTEM RACEWAYS, 2-INCH TRADE SIZE AND SMALLER, IN MAXIMUM LENGTHS OF 150 FEET (45 M) AND WITH A MAXIMUM OF TWO 90-DEGREE BENDS OR EQUIVALENT. SEPARATE LENGTHS WITH PULL OR JUNCTION BOXES WHERE NECESSARY TO COMPLY WITH THESE REQUIREMENTS, IN ADDITION TO REQUIREMENTS ABOVE.

C. CONNECT MOTORS AND EQUIPMENT SUBJECT TO VIBRATION, NOISE TRANSMISSION, OR MOVEMENT WITH A MAXIMUM OF 72-INCH FLEXIBLE CONDUIT. INSTALL LFMC IN WET OR DAMP LOCATIONS. INSTALL A SEPARATE GROUND CONDUCTOR ACROSS FLEXIBLE CONNECTIONS.

D. SET FLOOR BOXES LEVEL AND TRIM AFTER INSTALLATION TO FIT FLUSH TO FINISHED FLOOR SURFACE.

E. CONDUCTORS: TYPE THHN/THWN INSULATED CONDUCTORS IN RACEWAY.

F. INSTALL SPLICES AND TAPS THAT ARE COMPATIBLE WITH CONDUCTOR MATERIAL AND THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH AND INSULATION RATINGS THAN UNSPLICED CONDUCTORS.

G. INSTALL WIRING AT OUTLETS WITH AT LEAST 12 INCHES OF SLACK CONDUCTOR AT EACH OUTLET.

H. CONNECT OUTLET AND COMPONENT CONNECTIONS TO WIRING SYSTEMS AND TO GROUND. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS, ACCORDING TO MANUFACTURER'S PUBLISHED TORQUE-TIGHTENING VALUES. IF MANUFACTURER'S TORQUE VALUES ARE NOT INDICATED, USE THOSE SPECIFIED IN UL 486A.

3.5 IDENTIFICATION

A. PROVIDE ENGRAVED 3 LAYER LAMINATE PLASTIC NAMEPLATES FOR PANELBOARDS, DISCONNECT SWITCHES AND ALL SIMILAR DEVICES.

B. COLOR-CODE 480/277-VOLT SYSTEM THREE PHASE SERVICE, FEEDERS, AND BRANCH-CIRCUIT CONDUCTORS THROUGHOUT THE SECONDARY ELECTRICAL SYSTEM AS FOLLOWS:

1. PHASE A: BROWN
2. PHASE B: ORANGE
3. PHASE C: YELLOW
4. NEUTRAL: GRAY
5. GROUND: GREEN WITH YELLOW STRIPE

C. COLOR-CODE 208/120-VOLT SYSTEM THREE PHASE SERVICE, FEEDERS, AND BRANCH-CIRCUIT CONDUCTORS THROUGHOUT THE SECONDARY ELECTRICAL SYSTEM AS FOLLOWS:

1. PHASE A: BLACK
2. PHASE B: RED
3. PHASE C: BLUE
4. NEUTRAL: WHITE
5. GROUND: GREEN

3.7 OPERATING AND MAINTENANCE INSTRUCTIONS (O+M MANUAL)

PREPARE THREE (3) COPIES FOR ALL EQUIPMENT.

3.8 RECORD AS-BUILTS

PROVIDE (1) CLEAN, LEGIBLE COPY OF DRAWINGS TO ENGINEER INDICATING ALL DEVIATIONS FROM INITIAL DESIGN (AS-BUILT CONDITIONS).

3.9 STRUT CHANNEL – MANUFACTURERS

SUBJECT TO COMPLIANCE WITH REQUIREMENTS SET FORTH IN THE DRAWINGS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

1. UNISTRUT
2. COOPER B-LINE
3. ALLIED TUBE & CONDUIT
4. THOMAS & BETTS
5. WESANCO
6. GS GLOBAL METAL
7. APPROVED EQUAL

END OF SECTION

HECO ENGINEERS

Myers ■ Anderson
▪ Architecture ▪ Interior Design ▪ Historic Preservation
122 South Main Street ▪ Pocatello, Idaho 83204 ▪ Tel.: (208) 232 - 3741 ▪ Fax (208) 232 - 3782

PROFESSIONAL ENGINEER LICENSED 17578 STATE OF IDAHO PHILO V CARTER
1-31-24
ASID NCARB AIA

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
ELECTRICAL COVER

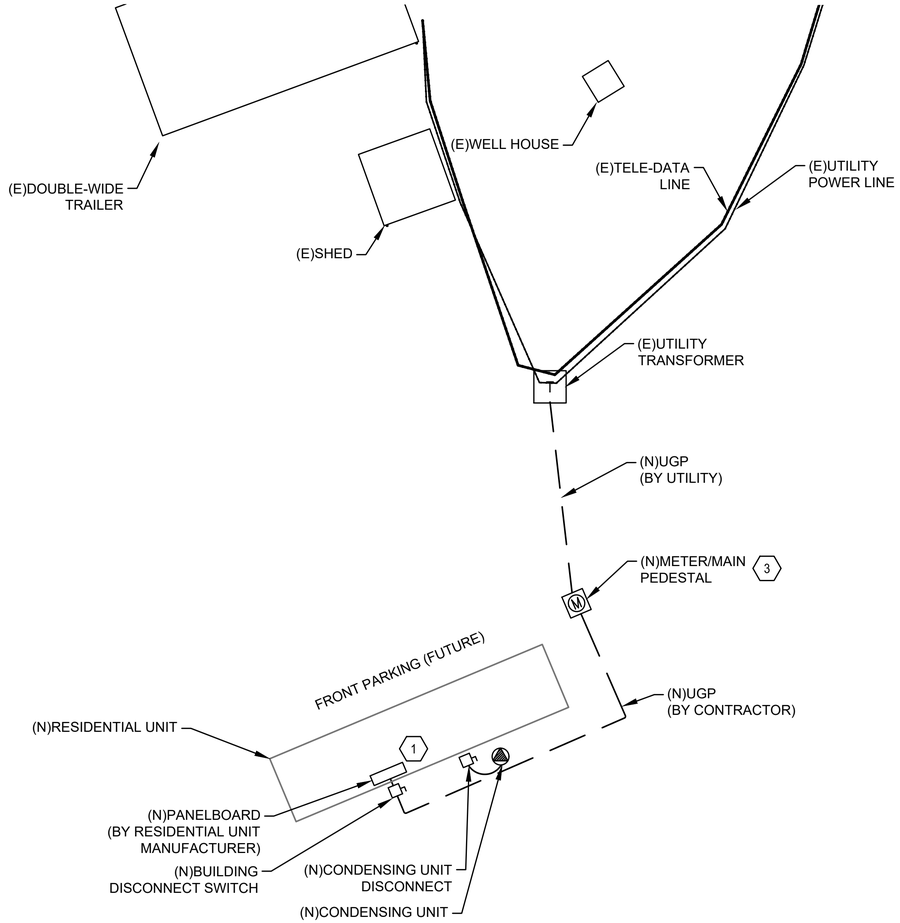
DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS SHOWN or IMPLIED

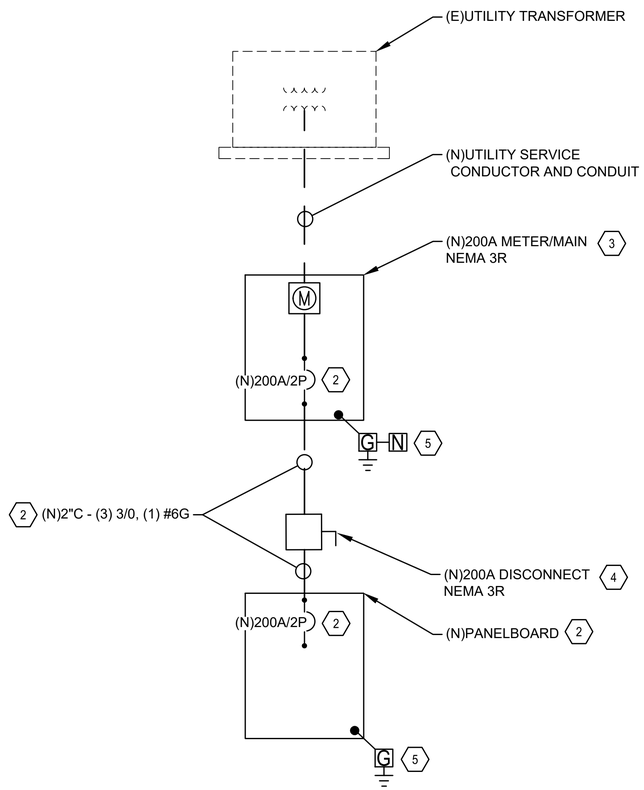
DO NOT DISTRIBUTE PARTIAL SETS OF DRAWINGS or SPECIFICATIONS

REVISION	DATE

CLIENT PROJ. NUMBER: ITD23-0375
ARCH. JOB NUMBER: 23607
SHEET ISSUED DATE: JANUARY 2024
SHEET E0.1



1 E1.0 ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"



2 E1.0 ONE-LINE DIAGRAM
SCALE: NTS

SHEET NOTES:

1. SITE PLAN SHOWS PROPOSED ELECTRICAL INSTALLATION FOR NEW RESIDENTIAL UNIT AND METER/MAIN.
2. CONTRACTOR GROUND METER/MAIN PEDESTAL AND NEW RESIDENTIAL UNIT PER NEC 250.
3. CONTRACTOR MAKE ALL CONNECTIONS FROM METER/MAIN TO RESIDENTIAL UNIT INDOOR PANEL.
4. CONTRACTOR TO LABEL METER/MAIN TO MATCH ADDRESS OF NEW RESIDENTIAL UNIT.
5. CONTRACTOR VERIFY NEC SERVICE OUTLET REQUIREMENTS MET FOR HVAC INSTALLATION. INSTALL 125V/20A OUTLET IF NECESSARY (GFCI PROTECTION AND WEATHERPROOF COVER REQUIRED FOR AN OUTDOOR OUTLET).
6. RESIDENTIAL UNIT MANUFACTURER TO MAKE ALL INDOOR CONNECTIONS.
7. UTILITY COMPANY CONTACT INFORMATION:
   SALMON RIVER ELECTRIC COOPERATIVE (SREC)
   DENNIS SWINDELL, OPERATIONS MGR.
   (208) 879-2283 EXT. 106
   dennis@srec.org

KEYNOTES:

1. PANEL LOCATION INDOORS, NEAR BACK EXIT OF NEW RESIDENTIAL UNIT.
2. THE RESIDENTIAL PANELBOARD SIZE AND CIRCUIT BREAKERS ARE DETERMINED BY THE MANUFACTURER OF THE RESIDENCE. CONTRACTOR ADJUST METER/MAIN BREAKER SIZE, CONDUIT, DISCONNECT, AND CONDUCTOR SIZES FROM METER/MAIN TO RESIDENTIAL PANEL BASED ON FINAL SELECTION OF MAIN BREAKER SIZE IN THE RESIDENTIAL PANEL.
3. INSTALL METER/MAIN AND ASSOCIATED EQUIPMENT IN ACCORDANCE WITH UTILITY (SREC) REQUIREMENTS FOR UNDERGROUND SERVICE. COORDINATE INSTALLATION WITH UTILITY (SREC).
4. INSTALL 200A/2P BUILDING DISCONNECT, SQUARE D DTU224NRB OR EQUAL. NEMA 3R ENCLOSURE REQUIRED. SEE KEYNOTE NO.2 REGARDING FINAL SIZES OF ELECTRICAL EQUIPMENT.
5. CONTRACTOR GROUND PER NEC 250.

HECO ENGINEERS

Myers ■ Anderson
▪ Architecture ▪ Interior Design ▪ Historic Preservation
122 South Main Street ▪ Pocatello, Idaho 83204 ▪ Tel. (208) 232 - 3741 ▪ Fax (208) 232 - 3782

PROFESSIONAL ENGINEER LICENSED 17578 STATE OF IDAHO PHILO V CARTER
ASID NCARB AIA
1-31-24

PROJECT NAME:
HUD Manufactured Home and Site Design

SHEET TITLE:
ELECTRICAL SITE PLAN

DRAWING SCALE APPLIES TO 22" X 34" SHEET SIZE

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REVISION	DATE

CLIENT PROJ. NUMBER: ITD23-0375
ARCH. JOB NUMBER: 23607
SHEET ISSUED DATE: JANUARY 2024
SHEET E1.0

GEOTECHNICAL INVESTIGATION

STANLEY MHU

4821 ID- 21

Stanley, ID

PREPARED FOR:

Jacob Jackson
Idaho Transportation Department
11331 West Chinden Boulevard, Building 8
Boise, ID 83714

PREPARED BY:

Atlas Technical Consultants, LLC
484 Eastland Drive South, Suite 103
Twin Falls, ID 83301

April 23, 2024
T240297g

484 Eastland Drive South, Suite 103
Twin Falls, ID 83301
(208) 733-5323 | oneatlas.com

April 23, 2024

Atlas No. T240297g

Jacob Jackson
Idaho Transportation Department
11331 West Chinden Boulevard, Building 8
Boise, ID 83714

Subject: Geotechnical Investigation
Stanley MHU
4821 ID- 21
Stanley, ID

Dear Jacob Jackson:

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 April 9, 2024. 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) 733-5323.

Respectfully submitted,

Keaton Ward
Staff Geologist

PROFESSIONAL ENGINEER LICENSED 18739 4/23/2024 STATE OF IDAHO ETHAN SALOVE

Ethan Salove, PE
Geotechnical Engineer

Clinton Wyllie, PG
Staff Geologist

CONTENTS

TABLES

APPENDICES

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 structure 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 in the City of Stanley, Custer County, ID, and occupies a portion of the SE¼NW¼ of Section 6, Township 10 North, Range 13 East, Boise Meridian. Site maps included in the **Appendix** show the project location.

This project will consist of placing a manufactured home that is roughly 1,000 square-feet in size on a raft/mat slab foundation system. Retaining walls are not anticipated as part of the project. Our scope of work for the project is limited to providing foundation recommendations for the site. Atlas has not been informed of the proposed grading plan.

1.2 Scope of Investigation

Our scope of work was completed in general accordance with our proposal dated February 8, 2024 and authorized on March 7, 2024. Said authorization is subject to terms, conditions, and limitations described in the Professional Services Contract entered into between Idaho Transportation Department and Atlas.

Atlas' scope of services included the following:

- Subsurface exploration via a single test pit advanced with a client supplied excavator.
- Field and laboratory testing of materials encountered and collected.
- Preparation of this report, which includes project description, site conditions, and our engineering analysis and evaluation for the project.
- Our scope of work did not include pavement section recommendations or stormwater infiltration recommendations.

2. SITE DESCRIPTION

2.1 Regional Geology

The subject site is located near the northwestern portion of the Stanley Basin on the south side of the Valley Creek drainage. The valley is bounded to the west by the Sawtooth Range and to the east by the Salmon River Range. The Sawtooth and Salmon River Ranges are composed of Cretaceous granitic rocks of the Idaho Batholith which have been intruded by volcanic rocks of the Challis Volcanics. Surficial deposits in the valley were predominately produced by glaciation of the upstream source areas during the Pleistocene and Holocene. These deposits generally include outwash deposits and terrace gravels. The site is underlain by glacial deposits that vary widely in grain size distribution locally (Kiilsgaard et. al., 2006).

2.2 General Site Characteristics

The following details regarding site conditions are based on visual observations and review of available geologic and topographic maps and imagery:

- **Current Site Conditions:** The site currently exists as a general-use gravel lot within an existing ITD maintenance facility. An existing manufactured home is present to the north of the proposed site and a covered steel barn structure is present to the southwest. The remainder of the site is surrounded by a mix of forest and undeveloped gravel driveways.
- **Vegetation:** Vegetation within the proposed building pad area is minimal and consists of some sparse native weeds and grasses. Surrounding the site, vegetation consists of mature trees, native weeds, and grasses.
- **Topography:** The site is relatively flat and level.
- **Drainage:** Stormwater drainage for the site is achieved by percolation through surficial soils.

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. See the **Geologic Hazards Assessment** section for discussion of hazards resulting from potential earthquake motions.

3.2 Seismic Design Parameter Values

The ASCE 7-16 seismic design parameter values have been provided below.

Table 1 – Seismic Design Values

Seismic Design Parameter	Design Value
Site Class	D "Default"
Site Modified Peak Ground Acceleration, PGA_M	0.534
S_s	1.012 (g)
S_1	0.328 (g)
F_a	1.200
F_v	N/A*
S_{MS}	1.214
S_{M1}	N/A*
S_{DS}	0.809
S_{D1}	N/A*

***Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.**

4. GEOLOGIC HAZARD ASSESSMENT

This section provides an assessment of the geologic hazards for the site, including the potential for surface fault rupture, liquefaction, and seismically induced settlements.

The hazard evaluation methodology involved one or two steps. First, the potential for occurrence of each type of geologic phenomenon is assessed. If there is a potential for a phenomenon to occur, the second step is to assess whether the phenomenon will result in a significant hazard for designated structures. For this evaluation, a significant hazard is defined as one that results in substantial structural damage and threatens life-safety.

4.1 Regional Faults

The subject site is located along the eastern margin of the Sawtooth Mountains. Per a map titled Geologic Map of the Deadwood River 30 x 60 Minute Quadrangle, Idaho (Kiilsgaard et. al., 2006), numerous Tertiary and Quaternary Period normal faults associated with the Sawtooth Mountains are mapped throughout the region. Tertiary faults experienced movement between 1.6 and 66 million years ago, and Quaternary faults experienced movement within the last 1.6 million years. Based on research, the closest major fault noted by Atlas is the Sawtooth Fault. This fault has caused at least two major (7.5+ magnitude) earthquakes in the last 10,000 years (Thackray et. al. 2013) and many other minor earthquakes.

4.2 Historical Seismicity

According to the USGS Earthquake Catalog, more than 1,500 earthquakes have been recorded within approximately 50 miles of the site with reported Richter Magnitudes ranging from 2.5 to 6.5. The majority of these earthquakes occurred north and west of the subject site. The closest earthquake to the project site occurred in February of 2024 approximately 1 mile to the north of the project site and had a magnitude of 2.4. In March of 2020 a 6.5 magnitude earthquake occurred 17.5 miles north-northwest of the subject site.

4.3 Seismically Induced Surface Rupture, Settlements, and Lateral Spreading

Earthquakes generally are caused by a sudden slip or displacement along a zone of weakness, termed a fault, in the Earth's crust. Surface fault rupture, which is a manifestation of the fault displacement at the ground surface, usually is associated with moderate to large-magnitude earthquakes (magnitudes of about 6 or larger) occurring on active faults having mapped traces or zones at the ground surface. The amount of surface fault displacement can be as much as 10 feet (3 meters) or more, depending on the earthquake magnitude and other factors. The displacements associated with surface fault rupture can have devastating effects on structures and lifelines situated astride the zone of rupture.

4.4 Liquefaction

Liquefaction is a soil behavior phenomenon in which a soil located below the groundwater surface loses a substantial amount of strength due to strong earthquake ground shaking. Some types of soil tend to compact during earthquake shaking, inducing excess pore water pressure in the saturated soil, which, in turn, causes a reduction in strength of the soil. Recently deposited (i.e., geologically young) and relatively loose natural soils, and uncompacted or poorly compacted fills, are potentially susceptible to liquefaction. Dense natural soils and well-compacted fills have a low susceptibility to liquefaction. Clayey soils, gravel sediments, and bedrock generally are not susceptible to liquefaction.

Possible consequences of liquefaction include vertical settlement, lateral displacement, loss of bearing capacity for foundations supported by soil that liquefies, increased lateral loading on structures retaining soil that liquefies, and flotation of lightweight structures embedded in soil that liquefies.

Based on the minimal presence of groundwater it is the opinion of Atlas that the probability of liquefaction at the project site is low.

5. SOILS EXPLORATION

5.1 Exploration and Sampling Procedures

Field exploration conducted to determine engineering characteristics of subsurface materials included a reconnaissance of the project site and investigation by a single test pit. A site map with a test pit location was provided to Atlas by ITD. The test pit was located in the field by means of a Global Positioning System (GPS) device and is reportedly accurate to within ten feet. Upon completion of investigation, the test pit was backfilled with loose excavated materials. Re-excavation and compaction of the test pit area is required prior to construction.

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

5.2 Laboratory Testing Program

Along with our field investigation, a supplemental laboratory testing program was conducted to determine additional pertinent engineering characteristics of subsurface materials. Laboratory tests were conducted in accordance with current specifications. The laboratory testing program for this report included:

- Atterberg Limits Testing – ASTM D4318
- Grain Size Analysis – ASTM C117/C136

5.3 Soil and Sediment Profile

The profile below represents a generalized interpretation for the project site. Note that on site soils strata, encountered between the test pit location, may vary from the individual soil profiles presented in the logs.

Table 2 – Typical Soil Profiles

Soil Horizons	Approximate Depths	Soil Types	Consistency/Relative Density
Fill Materials	0 to 1 foot	Poorly Graded Gravel with Sand Fill	Medium Dense to Dense
Surficial Soils	1 to 5.5 feet	Silty Sand with Gravel	Medium Dense to Dense
Intermediate Soils	5.5 to 7.5 feet	Poorly Graded Sand with Gravel	Dense to Very Dense
Deeper Soils	7.5 to 12 feet	Clayey Sand with Gravel	Medium Dense to Dense

During excavation, test pit 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.

5.4 Volatile Organic Scan

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 apparent odors or discoloration typically associated with this type of contamination. No groundwater was encountered.

6. 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.

6.1 Groundwater

During this field investigation, groundwater was not encountered in the test pit advanced to a maximum depth of 12.3 feet bgs. According to United States Geological Survey (USGS) monitoring well data within the project vicinity, groundwater was measured at 16.5 feet bgs. Based on evidence of this investigation and background knowledge of the area, Atlas has determined that the typical seasonal high groundwater should remain greater than approximately 10.0 feet bgs. However, shallow water seepage may be encountered during the late spring to early summer runoff season.

7. FOUNDATION AND SLAB DISCUSSION AND RECOMMENDATIONS

Various foundation types have been considered for support of the proposed structure. 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.

7.1 Foundation Loading Information

Loads of up to 4,000 pounds per lineal foot for wall footings were assumed for settlement calculations. Total settlement should be limited to approximately 1 inch and differential settlement should be limited to approximately ½ inch, provided the following design and construction recommendations are observed.

7.2 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 3 – Soil Bearing Capacity – Raft or Mat Slab

Footing Depth	ASTM D1557 Subgrade Compaction	Net Allowable Soil Bearing Capacity
The raft or mat slab must bear on at least 12 inches of compacted granular structural fill. Granular structural fill must bear on competent, undisturbed, native silty sand with gravel sediments. Existing fill materials must be completely removed from below raft or mat slab.[1] Excavation depths of roughly 1 foot bgs should be anticipated to expose proper bearing soils.	Not Required for Native Soil 95% for Granular Structural Fill	2,500 lbs/ft^2

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

For raft or mat slabs bearing on at least 12 inches of compacted granular structural fill material, a modulus of subgrade reaction, *k* value, of 200 pounds per cubic inch (pci) may be used for the slab design based on correlation to values typically resulting from a 1 foot by 1 foot plate load test. However, depending on how the slab load is applied, the value will need to be geometrically modified. The values should be adjusted for larger areas using the following expression:

Modulus of Subgrade Reaction for Square Mat Slabs: $k_s = k\left(\frac{B+1}{2B}\right)^2$

where: k_s = coefficient of vertical subgrade reaction for loaded square area,
k = coefficient of vertical subgrade reaction for a 1 square foot area, and
B = effective width of area loaded, in feet.

Modulus of Subgrade Reaction for Rectangular Mat Slabs: $k' = \frac{k_s(1+0.5\left(\frac{B}{L}\right))}{1.5}$

where: *k'* = coefficient of vertical subgrade reaction for loaded rectangular area,
k_s = coefficient of vertical subgrade reaction for loaded square area,
k = coefficient of vertical subgrade reaction for a 1 square foot area, and
B = effective width of area loaded, in feet,
L = effective length of area loaded, in feet.

7.3 Floor Slab-on-Grade

Uncontrolled fill was encountered in the single test pit advanced. Atlas recommends that these fill materials be completely removed. The excavated fill materials can be replaced in accordance with the **Fill Placement and Compaction** section provided that all organic material and 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 granular structural fill or suitable structural fill. Fill used to increase the elevation of the floor slab should consist of granular structural fill and suitable structural fill meeting the 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 compacted to at least 95 percent of the maximum dry density as determined by ASTM D1557. The mat must consist of aggregate base material as specified in the **Structural Fill** section.

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.

8. CONSTRUCTION CONSIDERATIONS

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. 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 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 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.

8.2 Grading

Positive grades must be maintained surrounding structures including exterior slabs. The interface of plant bedding materials and underlying soils should be graded to provide drainage away from site elements. Otherwise, bedding materials may direct water to underlying fine-grained soils, which increases the potential for localized heave. Excessive watering of landscaping should be avoided. If structures are to be tightly clustered, limiting space between two adjacent foundation systems, subsurface drains may be required to alleviate water ponding during short, intense storm events.

8.3 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. Problems may also arise because of lack of moisture in native soils and fill materials 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.

8.4 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.

8.5 Frozen Subgrade Soils

Prior to placement of 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 fill.

8.6 Structural Fill

The following table defines the types of fill material that is suitable for use on the project. Refer to the **Fill Placement and Compaction** section for recommended placement locations for each fill type listed below.

Table 4 – Fill Material Criteria

Fill Type	Material	Lift Thickness*
Granular Structural Fill	ISPWC Section 801 for 1-inch, 3-inch, or 6-inch Uncrushed Aggregate and ISPWC Section 802 Aggregate Base	12 inches
Aggregate Base	ISPWC Section 802 for Type 1 Crushed Aggregate Base	12 inches
Structural Subbase	ISPWC Section 801 for 3-inch or 6-inch Uncrushed Aggregate	12 inches
Suitable Structural Fill	Onsite/imported ML, SM, and GM soils that are free of organics and debris	6 inches

***Initial loose thickness, prior to compaction.**

8.7 Fill Placement and Compaction

Requirements for fill material type and compaction effort are dependent on the planned use of the material. The following table specifies material type and compaction requirements based on the placement location of the fill material.

Table 5 – Fill Placement and Compaction Requirements

Fill Location	Material Type	Compaction
Foundations	Granular Structural Fill	95% of ASTM D1557
Raft/Mat Slab	Granular Structural Fill or Suitable Structural Fill	95% of ASTM D1557
Top 4 Inches of Exterior Slab-on-Grade	Aggregate Base Material	95% of ASTM D1557
Below Exterior Flatwork Areas	Granular Structural Fill or Suitable Structural Fill	95% of ASTM D698 or 92% of ASTM D1557
Foundation Wall Backfill*	Granular Structural Fill or Suitable Structural Fill	95% of ASTM D1557
Utility Trench Backfill	Granular Structural Fill or Suitable Structural Fill	Per ISPWC Section 306

***Wall backfill material cannot exceed a maximum particle size of 4-inches.**

Prior to placement of fill materials, surfaces must be prepared as outlined in the **Earthwork** section. Fill material must be placed in horizontal lifts not exceeding 6-inches in thickness for fine-grained soils and 12-inches in thickness for granular structural fill, aggregate base material, and subbase material. All fill material must be moisture-conditioned to achieve optimum moisture content prior to compaction. During placement all fill materials must be monitored and tested to confirm compaction requirements have been achieved, as specified above, prior to placement of subsequent lifts. In addition, compacted surfaces must be in a firm and unyielding condition. Atlas personnel should be onsite to verify suitability of subgrade soil conditions, identify whether further work is necessary, and perform in-place moisture density testing.

Sufficient density tests should be performed to properly monitor compaction. At a minimum, Atlas recommends one test per lift as follows:

- Structures – 1 test every 5,000 square feet
- Exterior Flatwork Areas – 1 test every 10,000 square feet
- Foundation Wall Backfill – 1 test every 500 square feet
- Utility Trench Backfill – 1 test every 100 linear feet

Silty soils require very high moisture contents for compaction, 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 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, the exposed surface must be protected from degradation resulting from construction traffic or subsequent construction. It is anticipated that fine-grained soils will not be suitable for reuse during the wet season.

Use of silty soils (GM, SM, and ML) as structural fill below footings is prohibited. 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.

If material contains more than 40 percent but less than 50 percent oversize (greater than ¾-inch) particles, compaction of fill must be confirmed per ISPWC Section 202.3.8.C.3. Material should contain sufficient fines to fill void spaces and must not contain more than 50 percent oversize particles.

8.8 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 in the **Fill Placement and Compaction** section, 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. Atlas recommends in these areas that the top 12 inches must consist of a low permeability (clay or silt) soil to limit surface water infiltration.

Proper grading away from structures is critical. The surface must be graded away from the structure. In addition, Atlas recommends that roof drains carry stormwater at least 10 feet away from the structure.

8.9 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, test pit sidewalls generally exhibited little indication of collapse. 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.

8.10 Groundwater Control

Groundwater was not encountered during the investigation and is anticipated to be below the depth of most construction. Excavations below the water table will require a dewatering program. 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 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 structures, 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 structures, consultation with Atlas must be arranged as supplementary recommendations may be required. Suitability of subgrade soils and compaction of 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 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 nor 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.

Vicinity Map

Figure 1

MAP NOTES:

- Not to Scale

LEGEND

Approximate Site Location

Stanley MHU
4821 ID-21
Stanley, ID

Drawn by: KEW
April 18, 2024
Drawing: T240297g

ATLAS
484 Eastland Dr S, Ste 103
Twin Falls, ID 83301
Phone: (208) 733-5323
Fax: (208) 733-0564
Web: oneatlas.com

Site Map

Figure 2

NOTES:

- Not to Scale

LEGEND

Approximate Site Boundary

Approximate Atlas Test Pit Location

Stanley MHU
4821 ID-21
Stanley, ID

Drawn by: KEW
April 18, 2024
Drawing: T240297g

ATLAS
484 Eastland Dr S, Ste 103
Twin Falls, ID 83301
Phone: (208) 733-5323
Fax: (208) 733-0564
Web: oneatlas.com

APPENDIX IV GEOTECHNICAL INVESTIGATION TEST PIT LOG

Test Pit Log #: TP-1
Date Advanced: April 9, 2024
Excavated by: Client Provided Backhoe
Logged by: Dax Harris
Latitude: 44.227718
Longitude: -114.988977
Depth to Water Table: Not Encountered
Total Depth: 12.3 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-0.8	Poorly Graded Gravel with Sand Fill (GP-FILL): Brown, moist, medium dense to dense, with fine to coarse-grained sand and fine to coarse gravel. --Snow was noted at test pit surface. --Frost zone encountered throughout.				
0.8-5.5	Silty Sand with Gravel (SM): Light brown to brown, dry to moist, medium dense to dense, with fine to coarse-grained sand and fine to coarse gravel. --Minor 4-inch-minus cobbles encountered from 2.2 to 5.5 feet bgs. --Frost encountered to 3.5 feet bgs. --Intermittent clay content encountered throughout.	GS	2.0-2.5		A
5.5-7.3	Poorly Graded Sand with Gravel (SP): Brown, dry, dense to very dense, with fine to coarse-grained sand and fine to coarse gravel. --Minor 5-inch-minus cobbles encountered throughout. --Intermittent clay content encountered throughout.				
7.3-12.3	Clayey Sand with Gravel (SC): Light brown to brown, slightly moist to moist, medium dense to dense, with fine to coarse-grained sand and fine to coarse gravel.				

Notes: See Site Map for test pit location.

Lab Test ID	Moisture (%)	LL	PI	Sieve Analysis (% Passing)						
				2”	½”	#4	#10	#40	#100	#200
A	8.0	NP	NP	98	79	66	54	32	22	16.8

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	Silts & 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
	Silts & 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
Silts:	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

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.***

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