HANGAR 12 SERVICE CENTER WAREHOUSE ADDITION DASSAULT FALCON JET

POLK STANLEY WILCOX

LITTLE ROCK, ARKANSAS

PROJECT MANUAL **PSW PROJECT: 699H**

NO SILICONE SEALANT ALLOWED ON PROJECT PER INTERNATIONAL FIRE CODE SECT. 2404.3.2.1

BID ISSUE
ISSUE: SEPTEMBER 24, 2026

VOLUME 1 OF 2



ARCHITECT
Polk Stanley Wilcox Architects

CIVIL ENGINEER
Olsson

STRUCTURAL ENGINEER
Engineering Consultants, Inc.

MECHANICAL, PLUMBING & ELECTRICAL ENGINEER
Insight Engineering

LITTLE ROCK 801 South Spring Street Little Rock, AR 72201 501.378.0878
FAYETTEVILLE 509 West Spring Street, Suite 150 Fayetteville, AR 72701 479.444.0473
polkstanleywilcox.com

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1.01 Sealed bids for construction of Hangar 12 Service Center Warehouse Addition for Dassault Falcon Jet in Little Rock, Arkansas will be received until 2:00 P.M., Local Time on Tuesday October 20, 2026, at DFJ Main Guard House, Attention: Ryan Roy.

Bids will be received and reviewed by the Owner privately. They will not be opened publicly and read aloud.

1.02 A mandatory pre-bid conference will be held at 1:30 P.M., Local Time on Thursday October 1, 2026, on-site at DFJ Main Guard House. General Contractors failing to attend this meeting will forfeit the right to submit a bid. Subcontractors are strongly encouraged to attend this meeting but are not required to attend. The Owner reserves the right to schedule additional meetings.

1.03 The work includes Site Preparation and Improvements, General Construction, Mechanical Work, Plumbing Work and Electrical Work, all to be let under one prime contract.

1.04 A Bidder's Bond is not required.

1.05 Copies of drawings, specification and other proposed contract documents are on file and are open to inspection at the following places.

Southern Reprographics Plan Room

1.06 General Contractors may obtain contract documents from Southern Reprographics, Inc., 901 West 7th, Little Rock, Arkansas 72201 (Phone 501-372-4011) for the actual cost of printing, which is not refundable.

1. Electronic copies of the bid documents may be obtained by arrangement with Southern Reprographics.

1.07 Bidders, sub-bidders, material suppliers and other interested parties are encouraged to obtain complete sets of Bid Documents. Complete sets of Bid Documents should always be used in preparing bids. Neither the Owner nor Architect assumes responsibility for errors in bidding or misinterpretations of Bid Documents resulting from the use of incomplete sets of Bid Documents. The documents obtained through the Architect are considered the official version and take precedence if any discrepancies occur. The use of incomplete or inaccurate Bid Documents does not relieve the bidder of the obligation to perform all work related to his bid as detailed in a complete set of Bid Documents.

1.08 All bidders shall conform to the requirements of Arkansas Code Annotated 17-25-101, Arkansas State Licensing Law for Contractors.

1.09 The Owner reserves the right to waive any formalities in, or to reject any or all bids.

1.10 No bidder may withdraw his bid within 30 days after the date of the opening thereof.

END OF DOCUMENT

PART 1 - GENERAL

1.01 GOVERNING STANDARD DOCUMENT

A. "Instructions to Bidders", Document No. A701 of American Institute of Architects, 2018 Edition is bound and incorporated into these specifications and is to be used as the Instructions to Bidders for this contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF DOCUMENT

AIA Document A701 – 2018

Instructions to Bidders

for the following PROJECT:

Hangar 12 Service Center Warehouse Addition

THE OWNER:

Dassault Falcon Jet

THE ARCHITECT:

Polk Stanley Wilcox
801 South Spring Street
Little Rock, Arkansas 72201

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

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- **.1** the Bidder has read and understands the Bidding Documents;
- **.2** the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- **.3** the Bid complies with the Bidding Documents;
- **.4** the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- **.5** the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- **.6** the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

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§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect by **end of day 5 Days Prior to the Bid Date.**

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Submit substitution requests in accordance with Section 01 30 00. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the Work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final. Substitutions will not be considred prior to the award of the Contract.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 **Final Addendum will be issued no later than 3 Days Prior to the Bid Date.**

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

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§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security
§ 4.2.1 A Bid Bond is not required.

§ 4.3 Submission of Bids
§ 4.3.1 A Bidder shall submit its Bid as indicated below:

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid
§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids
Bids will be opened privately.

§ 5.2 Rejection of Bids
Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

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§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- **.1** a designation of the Work to be performed with the Bidder's own forces;
- **.2** names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- **.3** names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

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§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.

.2 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.

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User Notes: (1934509690)

PART 1 - GENERAL

1.01 SOILS REPORT

A. A geotechnical investigation of the site has been made for use in site grading and foundation design for this Project. This report has been bound herein for information purposes only. Boring logs and test data are for information only. Conditions are not intended as representations or warranties of accuracy or continuity between soil borings. Architect and Owner will not be responsible for interpretations or conclusions drawn from this data by Contractor and advise Contractor to make his own investigations as he deems necessary.

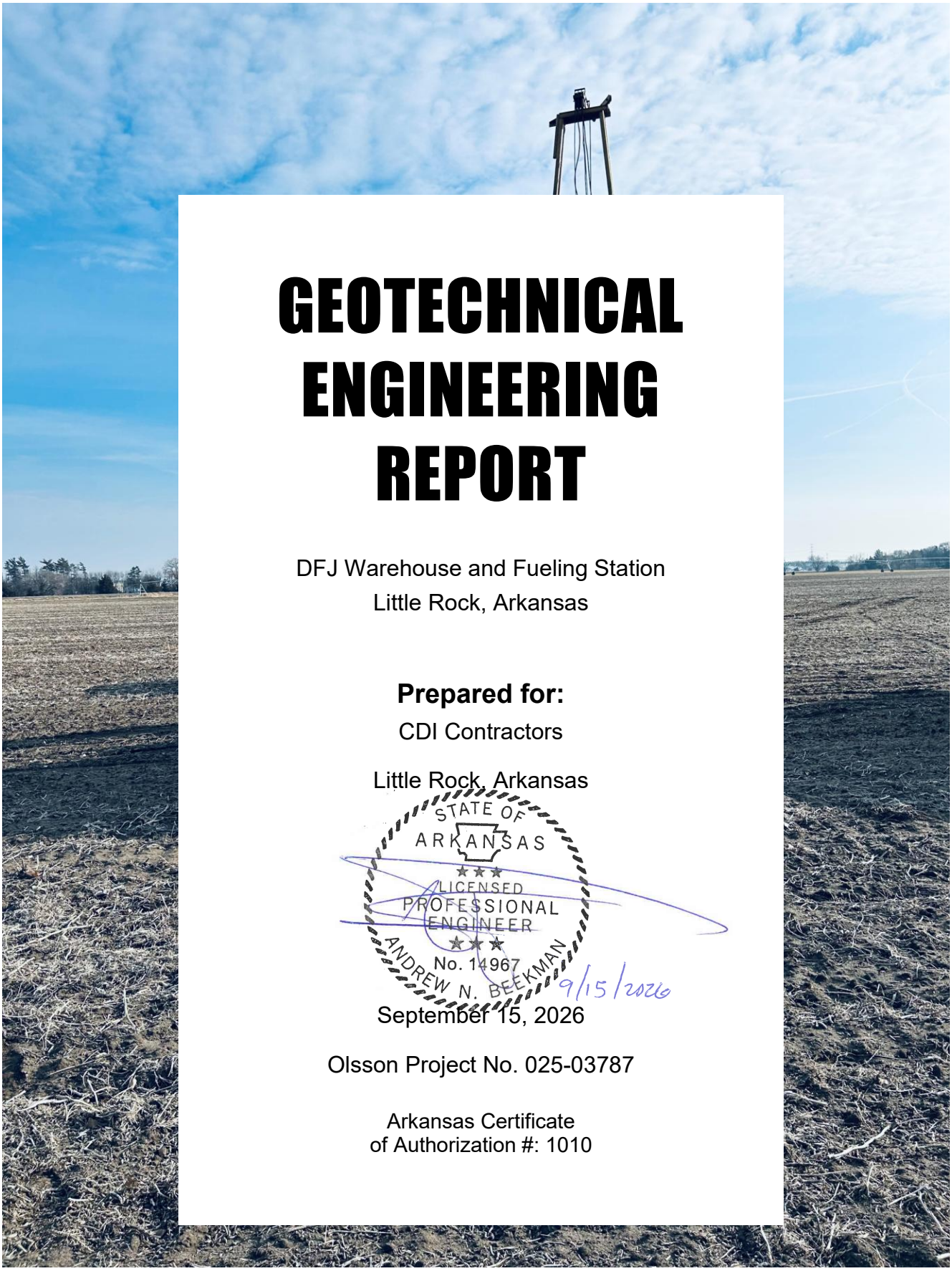
B. Additional test borings and other exploratory operations may be performed by Contractor, at the Contractor's expense; however, no change in the Contract Sum will be authorized for such additional exploration.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF DOCUMENT

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GEOTECHNICAL ENGINEERING REPORT

DFJ Warehouse and Fueling Station
Little Rock, Arkansas

Prepared for:

CDI Contractors

Little Rock, Arkansas

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 14967
ANDREW N. BEEKMAN
9/15/2026

September 15, 2026

Olsson Project No. 025-03787

Arkansas Certificate
of Authorization #: 1010

olsson®

September 15, 2026

CDI Contractors
Attn: Mr. Jacob Estes
3000 Cantrell Road
Little Rock, Arkansas 72202

RE: Geotechnical Engineering Report
DFJ Warehouse and Fueling Station
Little Rock, Arkansas
Olsson Project No. 025-03787

Dear Mr. Estes:

In general accordance with our "Letter Agreement for Professional Services" dated May 26, 2026, as well as our "Letter Agreement Amendment #1" dated August 11, 2026, Olsson, Inc. has completed the authorized geotechnical exploration for the above-referenced project. The geotechnical exploration was conducted to evaluate the subsurface conditions with respect to design and construction of the project. The enclosed report summarizes the project characteristics as we understand them, presents the findings of the exploration and laboratory testing, discusses the observed subsurface conditions, and provides our geotechnical engineering recommendations.

A boring location map, boring logs, and a description of our exploration program, are provided in **Appendix A**. Laboratory test results are presented in **Appendix B**.

We appreciate the opportunity to provide our geotechnical engineering services for this project and are prepared to provide construction phase services as well. If you have any questions or need further assistance, please contact us at your convenience.

Respectfully submitted,
Olsson, Inc.
Arkansas Certificate of Authority No. 1010

R. Todd Hercules, PE (MO, KS)
Geotechnical Project Engineer
636.544.8006
thercules@olsson.com

Andrew Beekman, PE
Senior Geotechnical Engineer
479.443.3404
abeekman@olsson.com

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APPENDICES

Appendix A Exploration Maps, Logs, and Information
Appendix B Laboratory Test Results

EXECUTIVE SUMMARY

This report presents the results of the geotechnical exploration performed for the proposed DFJ Warehouse and Fuel Station located at the Bill and Hillary Clinton National Airport in Little Rock, Arkansas. Based on our understanding of the project details, the project will comprise construction of a new warehouse building addition, a new fuel station and new paved drive lanes and parking areas.

The geotechnical considerations which may impact the design and construction of the proposed project are summarized below.

- Subsurface conditions consisted of sandy silt fills over native alluvial deposits extending to boring termination depths. Soft and loose zones were noted within the fill and native soils.
- Because there can be variations in thickness, quality and composition of existing fill materials there is an inherent risk with supporting new structures above existing fill materials. Recommendations are provided in this report to reduce such risks; however, the only way to eliminate this risk is to fully remove the existing fill materials and replace the material with approved, structural fill material compacted in standard-thickness lifts.
- We encountered low-strength soils beginning within 2 feet of the ground surface and extending to depths of about 4 to 9 feet below the ground surface in vicinity of planned structures. These low-strength soils are not suitable for supporting foundations, floor slabs, pavements or new fill without improvement.
- Fat clay soils with moderate to high swell potential were noted in the northeast quarter of the proposed project area. Fat clay materials are not suitable to remain in place (or for reuse as structural fill) within 2 feet of building floor slabs or within 1-foot of pavement sections.
- Based on our understanding of the project design criteria and our investigation, the proposed new structures can be supported on a shallow foundation system bearing on newly placed, controlled fills or on approved, stiff or medium dense native soils. Several options are discussed in this report to mitigate the risk of supporting new structures on a shallow foundation system above the existing fill material. We recommend a net allowable bearing pressure of 1,800 pounds per square foot (psf) be used in design.

This Executive Summary provides a limited overview of the report and is subject to any and all clarifications, conditions, contingencies, limitations and/or qualifications that may exist in the body of the report. The Client nor any other party may rely solely on this Executive Summary. Client and any other party using this report must review the entire report and interpret the information contained in this Executive Summary in conjunction with the remainder of the report.

1. PROJECT UNDERSTANDING

1.1 Project Information

We understand the proposed development will comprise construction of a new warehouse addition and new fueling station at the Dassault Falcon Jet (DFJ) facility at the Bill and Hillary Clinton National Airport in Little Rock, Arkansas. Improvements also include the extension of an existing drive off Ventura Lane to extend to Hangar 12. We anticipate the new structures will generally be steel frame, concrete masonry unit (CMU), or precast concrete construction. The additions are anticipated to be single-story with possible increased eave heights and slab-on-grade floors.

Table 1. Project Information.

Project Detail	Value	Notes
Plan Area	• Warehouse Building Addition: 200’ x 110’; may be constructed in two phases • Fuel Station: 80’ x 80’	Provided
Finished Floor Elevation	• Building Additions: Similar or matching existing building. • Fuel Station: Within 1-foot of existing grade.	Estimated by Olsson
Maximum Column Load	60 kips	Estimated by Olsson
Maximum Wall Load	1 to 3 klf	Estimated by Olsson
Floor Slab Load	100 psf	Estimated by Olsson

Based on the elevations noted in Google Earth, existing site grades range from an elevation of approximately 252 to 258 feet. As such, up to 3 feet of fill and 3 feet of excavation may be required to achieve the design site grades.

If the structural loads or site grading exceed these values, the geotechnical engineer should be contacted to verify that the recommendations contained in this report remain valid.

1.2 Site Description

The proposed development will be located on the existing DFJ facility located southeast of the intersection of East 9th Street and Ventura Avenue in Little Rock, Arkansas. At the time of our field exploration, the subject site was noted to be primarily grass covered and was accessible to

a truck-mounted drilling rig. The project site is located approximately 2,000 feet to the south of the Arkansas River.

Based on historic aerial imagery from Google Earth, the existing warehouse building at the subject site was noted to be constructed between the years 2006 and 2009. The subject site was noted to be residential property prior to the year 2009. Between the years 2006 and 2009, the residential structures were removed and the site was noted to be primarily grass covered. The approximate location of the proposed subject site is shown in **Figure 1**.



Figure 1. 2022 Aerial Photograph/Project Location Plan.

2. SUBSURFACE CONDITIONS

2.1 Subsurface Profile

The appended borehole reports represent subsurface conditions at the specific boring locations at the time of our field exploration; variations may occur between or beyond the borings. The stratification lines shown on the logs represent the approximate boundary between material types. However, the transition between layers may be gradual. The depths referenced in the following paragraphs are relative to the site grade at the time of our exploration.

The subsurface soils at this site comprised existing fill materials over alluvial deposits consisting of clays and silts over sands. The general characteristics of each soil stratum are summarized below, with more detailed descriptions provided on the borehole reports in **Appendix A**.

Surfacing and Topsoil

We encountered areas of existing gravel surfacing near the existing warehouse in B-01, B-02, and B-03. Topsoil was noted at the surface of the remaining borings as well as at the surface of B-02 above the gravel. A summary of the surface materials with depths is noted in **Table 2**.

Table 2. Surface Material Thickness.

Boring No.	Surfacing Material	Thickness (inches)
B-1	Gravel	12
B-2	Topsoil	7
	Gravel	5
B-3	Gravel	4
B-4	Topsoil	7
B-5	Topsoil	7
B-6	Topsoil	7
B-7	Topsoil	8
B-8	Topsoil	8
B-9	Topsoil	8
B-10	Topsoil	8
B-11	Topsoil	7

Existing Fill

We encountered existing fill and possible fill within all borings. Existing fill was noted extending from below surface materials to depths of 2.3 to 7.5 feet within the borings performed. Fill depths may vary from those noted in areas not explored. A summary of the existing fill encountered at our boring locations is shown in **Table 3**.

Table 3. Existing Fill Summary

Boring No.	Fill or Possible Fill	Material	Approximate Depth (ft.)
B-01	Fill	Sandy Silt	2.5
B-02	Fill	Sandy Silt	2.3
	Possible Fill	Sandy Silt	6.0
B-03	Fill	Sandy Silt	2.5
B-04	Possible Fill	Silty Clay	7.5
B-05	Possible Fill	Silty Clay and Fat Clay	7.5
B-06	Fill	Sandy Silt	2.5
B-07	Fill	Silty Clay	3.5
B-08	Fill	Silty Clay	6.0
B-09	Fill	Silty Clay	5.0
B-10	Fill	Lean Clay with sand	5.0
B-11	Fill	Silty Clay	5.0

Native Soils

Native soils at the subject site generally consisted of alluvial deposits from the nearby Arkansas River. The alluvial deposits generally consisted of lean and fat clays (where present) over silts and poorly graded sands. Native soils were generally soft to stiff and loose to dense. Due to the nature of alluvial deposits, highly varying materials and varying densities are anticipated throughout the native soils

2.2 Water Level Observations

We observed water in our soil borings as summarized in **Table 4** and as indicated on the boring logs presented in **Appendix A**.

Table 4. Water Level Observations.

Boring No.	Water Level Depth While Drilling (feet)	Water Level Depth Immediately After Drilling (feet)
B-01	23.0	23.0
B-02	22.5	22.5
B-03	22.5	22.5
B-04	Not Encountered	Not Encountered
B-05	Not Encountered	Not Encountered
B-06	Not Encountered	Not Encountered
B-07	18.0	19.0
B-08	6.0	6.0
B-09	Not Encountered	Not Encountered
B-10	Not Encountered	Not Encountered
B-11	8.0	8.0

The above observations provide an indication of the on-site water levels at the time the borings were drilled but should not be construed to represent a permanent or absolute condition. Variations and uncertainties exist with relatively short-term water level observations in boreholes.

Subsurface water levels will fluctuate over time with variations in precipitation, site grading, drainage, and adjacent land use. Perched water conditions can also develop in seams of loose or granular soil. Any foundation design or global stability analysis must take into consideration changing subsurface water conditions.

Long-term monitoring with piezometers generally provides a more representative indication of the potential range of subsurface water conditions. Such monitoring was not completed as part of this exploration. Olsson can provide additional monitoring upon written request of the Owner and/or Olsson's client. Recommendations for addressing effects of water in design and during construction are presented in **Section 4.3** of this report.

2.3 Geological Conditions

Based on the Arkansas Geological Map from the United States Geological Survey (USGS), the subject site is located over Quaternary Alluvium. This material consists of soils deposited from local streams or overflows from the Arkansas River. Soils within alluvium are typically unconsolidated and consist of highly variable layers of clays, silts, and sands. Due to the site's proximity to the Arkansas River, shallow and fluctuating ground water levels may also be

anticipated within these materials. Groundwater levels will be highly influenced by the levels of the nearby Arkansas River.

3. GEOTECHNICAL CONSIDERATIONS

Based on a review of aerial imagery and subsurface exploration, the subject site formerly contained residential housing including fill materials as noted in **Section 1.2** and **Section 2**. Documentation of building removal or fill placement was not provided to Olsson at the time of this report. Accordingly, construction over existing fill materials at the subject site brings with it some risk. Risk may include the items noted below. Remediation of these conditions are discussed in **Section 5** and **Section 6**.

- Presence of former building elements such as buried slabs, basements, or foundations in areas not explored
- Unsuitable soils, deleterious materials, and/or construction debris in areas not explored
- Improperly placed and/or uncompacted soils and native low-strength soils which may lead to excessive settlement and decreased performance of future structures supported above these soils.

The project site is located over alluvial deposits consisting of variable layers of clays, silts and sands. Soil consistency and density were noted to vary in the native soils from soft to stiff and loose to dense materials. Accordingly, highly varying subsurface conditions should be anticipated at the subject site. These low-strength soils are not suitable for supporting typical foundation loads, slabs-on-grade, pavements or new fills without removal and replacement or ground improvement. It is recommended that an additional allotment of over-excavation and replacement be included in project schedules and budgets for mitigation of low-strength soils and mitigation of any deleterious materials within or below the existing fill materials.

Isolated areas of high plasticity clays (CH) were noted within the subsurface exploration of B-03, B-05, and B-06 from 2.5 to 10 feet below the ground surface. High plastic (fat) clay soils at the subject site may cause excessive shrinking or swell with changing moisture conditions. Excessive shrinkage or swelling of the soils may cause foundation, slab, and/or pavement distress at the project site. Swell testing performed on the fat clay material indicates potential swells of 6 percent with swell pressures up to 2.7 tons per square foot (tsf). Recommendations for fat clay remediation have been provided in **Section 5** and **Section 6**.

4. EARTHWORK AND CONSTRUCTION CONSIDERATIONS

The following sections discuss general earthwork and construction considerations for overall site preparation. Additional earthwork or soil improvements may be required beneath floor slabs, pavements, or foundations. These additional recommendations, if applicable, are presented in **Section 5**.

4.1 Site Preparation

4.1.1 General

Vegetation, topsoil, roots, and other deleterious materials deemed unsuitable by an Olsson geotechnical engineer or their authorized field representative should be removed from the proposed construction area and replaced with controlled fill. We recommend site clearing, grubbing, and stripping be performed during dry weather conditions. Operation of heavy equipment on the site during wet conditions could result in excessive rutting and mixing of organic debris with the underlying soils.

At the base of stripping operations or demolition excavations and prior to the placement of structural fill, we recommend the top 9 inches of the exposed subgrade soils be scarified and recompacted in accordance with **Section 4.2** of this report.

Soils which cannot be adequately densified in-place should be removed and replaced with approved structural fill or stabilized under the direction of an Olsson representative. The extent of areas requiring removal or stabilization will depend on the conditions observed at the time of construction. Undercut areas should be backfilled with stable fill material similar in composition to the surrounding soils.

If necessary, one or more layers of crushed stone may be considered to stabilize areas where wet soil or water are present. Geogrid or geosynthetic fabric may be used in conjunction with the crushed stone to provide additional stabilization. Chemical stabilization methods such as fly ash, cement kiln dust (CKD), or Portland cement could also be considered with direction from the geotechnical engineer.

4.2 Structural Fill

We recommend that fill materials placed within 24 inches of the base of the floor slab aggregate base have a liquid limit less than 45, and a plasticity index less than 25. We recommend structural fill soils within 12 inches of the base of pavements have a liquid limit less than 50, and a plasticity index less than 30. Soils with Atterberg limits greater than these values will require removal or blending with less plastic materials prior to use immediately beneath floor slabs or

pavements. All structural fill soils should also be relatively free of organic materials, debris, and particles larger than 3 inches in nominal diameter.

Based on our site observations and Atterberg limits testing performed as part of this exploration, the some of the on-site soils generally appear suitable for reuse as structural fill as noted below.

- Existing silty sand fills
    - Anticipated to be suitable for reuse in all areas. The existing fill material should be evaluated for the presence of deleterious material before reuse as fill; portions of the existing fill containing deleterious material should not be reused as fill material.
- Native lean clays and sands
    - Anticipated to be suitable for reuse in all areas.
- Fat clays
    - Not suitable for use as structural fill.

Samples of all proposed structural fill, including on-site soils, should be submitted to Olsson at least seven days before placement for testing and approval.

Proper lift thickness depends on the type of compaction equipment used, but in general, we recommend a maximum lift thickness of 8 inches in loose measurement. Thinner lifts could be required in confined areas such as around manholes, behind retaining walls, or within footing and utility trenches. Soils should be compacted using equipment of appropriate type and size to achieve the recommendations presented in this report. Water flooding is not an acceptable compaction method for any soil type.

We recommend that structural fill and backfill be compacted in accordance with the criteria stated in **Section 4.2**. Utility trenches, foundation excavations, retaining walls, and pavement curbs should be backfilled as soon as possible to reduce the risk of water infiltration into the subgrade.

An Olsson field representative should periodically observe fill placement operations and perform field moisture-density tests to document whether moisture content and compaction requirements are being achieved.

The moisture content of suitable borrow soils should be within the ranges specified in **Table 5**. More stringent moisture limits may be necessary with certain soils. Adjustment of moisture content may be necessary to allow compaction in accordance with project specifications.

Table 5. Structural Fill Placement Guidelines.

Area of Fill Placement	Suitable Material (USCS or Description)	Compaction (ASTM D698 - Standard Proctor)	Moisture Content (Percent of Optimum)
Granular Structural Fill	ASTM C-33 No. 57 aggregate or approved alternative	95%*	As necessary to obtain density
Structural fill placed within 24 inches below floor slab subgrade	Approved soils with LL < 45 and PI<25, or approved alternative	95%	-2 to +2 percent
Structural fill placed 12 in. below base of pavement/granular cushion	Approved soils with LL < 50 and PI<30, or approved alternative	95%	-2 to +2 percent
Utility trenches	Cohesive Structural Fill or CLSM	95%	-2 to +2 percent
** Or 70 percent Relative Density as described below*			

Granular fill materials may not produce a definable moisture-density curve when tested in accordance with ASTM D698 (Standard Proctor). Such materials could alternatively be compacted to a minimum of 70 percent relative density as determined by ASTM D4253 (Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table) and D4254 (Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculations of Relative Density).

Controlled low strength material (CLSM) or flowable fill may be considered for utility or other small backfills. We recommend flowable fill have a compressive strength between 100 and 300 pounds per square inch (psi). CLSM with a maximum compressive strength less than 300 psi can be readily excavated with a backhoe. CLSM can be placed in a single lift, without personnel entering the excavation and without the need for compaction equipment.

4.3 Dewatering Considerations

We encountered water within the borings at the time of our exploration as indicated in **Table 4**. While we do not anticipate groundwater will affect building construction activities, it may be a factor in utility excavations and excavations for underground storage tanks, if applicable. Variations in groundwater elevation could occur because of seasonal changes in rainfall, temperature, snowmelt, runoff, localized irrigation demand, or other factors. Shallower perched water conditions are possible at the subject site. Saturated soil and higher groundwater elevations should be anticipated in areas near drainage channels and ditches.

The contractor should utilize their experience in this area and experience with similar projects to determine the most effective method of dewatering and the effects of such methods on nearby structures, utilities, or pavements.

4.4 Temporary Slopes and Excavations

Construction site safety is the sole responsibility of the general contractor. The contractor is also responsible for the means, methods, techniques, sequencing, and operations used during construction. Slope height, slope inclination, and excavation depths (including utility trench excavations) should in no case exceed those specified in local, state, or federal safety regulations.

4.5 Equipment Mobility

Some of the soils encountered at this site may be susceptible to softening under the action of construction equipment traffic in combination with wet weather. Mitigation of equipment mobility problems and management of soft surficial soils will depend on the severity of the problem, the season in which construction is performed, and prevailing weather conditions.

During construction, provisions should be made to quickly remove seepage water or storm water from excavations. Water should not be allowed to collect near foundations, floor slabs, pavements, or retaining walls either during or after construction. Undercut or excavated areas should be sloped toward one corner to facilitate the collection and removal of rainwater or surface runoff. Site grading should provide rapid drainage of water away from the structure and pavement areas throughout construction.

Additional guidelines for reducing equipment mobility problems are as follows:

- Optimize surface water drainage at the site.
- Allow for rain days in the construction schedule and wait for dry weather conditions to prevail whenever possible. Avoid operating construction equipment on the site during wet conditions. Rutting the surface will aggravate mobility problems.
- Use construction equipment that is suited for the intended job under the site conditions. Heavy rubber-tired equipment typically requires better site conditions than light, track-mounted equipment.

Ultimately, it may be necessary to take steps to aggressively improve equipment mobility if construction must proceed under unfavorable conditions. More aggressive methods for addressing equipment mobility problems may range from removing several feet of soft wet soils to utilizing crushed stone materials and/or appropriate stabilization fabrics or geogrids. Other

methods include chemical stabilization with Portland cement, fly ash, or cement kiln dust (CKD). The stabilization approach should be determined at the time of construction in consultation with an Olsson geotechnical engineer.

The contractor is responsible for creating and maintaining a stable working platform. Soils that are disturbed by construction activity or adverse weather conditions should be corrected by the contractor to conform with project specifications and this report.

5. STRUCTURES DESIGN

Based on the results of our borings, laboratory testing, and engineering evaluation, our opinion is that the subsurface conditions are suitable for supporting the proposed structure on a shallow foundation system. Soil improvement methods may also be considered for improved soil performance, capacity, and reduced settlements.

It should be noted that the construction of building additions next to the existing facility could cause increased stress on the existing soils beneath the existing building foundations. The increase in stress may cause additional settlement of the existing building. Building additions supported on deep foundations may help reduce these conditions; however, additional exploration will be required for such recommendations. Contact Olsson if alternative deep foundation recommendations are desired for the development.

5.1 Shallow Foundations

Based on the results of our exploration and engineering evaluation, and that the understanding that finished floor elevation (FFE) is within 1 foot of existing grades, the proposed structures may be supported on conventional shallow foundation systems after subgrade improvements as outlined in this section.

5.1.1 Foundation Subgrade Preparation

Based on the results of our exploration and engineering evaluation, there is a risk of unforeseen settlement and performance of new structures supported above the existing fill materials encountered at the subject site. To reduce this risk, we recommend that the buildings be supported entirely on a minimum of 2 feet of new structural fill that is placed and compacted above approved site soils. To accomplish this, the foundation trench excavations should be over-excavated to reach a minimum depth of 2 feet below the bottom of foundations. The exposed subgrade materials within the excavation should be observed by Olsson for suitable materials and soil shear strengths as well as for the presence of deleterious materials. Unsuitable soils, if encountered, should be further excavated and removed full-depth and replaced with new fill material (placed in lifts, moisture conditioned, and compacted as described in **Section 4.2** to the bottom of building foundation elevations.

If the owner is unwilling to accept the risk of bearing above the existing fill materials on site, the existing fill materials should be removed to full depth within foundation trenches to expose suitable native soils. Exposed subgrade materials should be observed and approved by Olsson for suitable soils and shear strengths. After foundation trench over-excavation, foundations may be extended to native soils (i.e., overpoured with reinforced concrete) or the foundation trenches may be backfilled up to plan bottom of foundation elevations (either with flowable fill or with new

soil fill placed in controlled lifts, moisture conditioned, and compacted in accordance with **Section 4.2**.

Care should be taken during excavation that the existing building foundations are not undermined during removal and replacement procedures. We recommend that any excavation below the existing footings not extend below an imaginary plane extending out and down from the exterior bottom edge of existing footings at a slope of approximately 2H:1V (Horizontal:Vertical). Excavations that extend below the level of existing footings should be backfilled the same day they are excavated. Where excavations extend below the existing foundation level and are within the 2H:1V plane as discussed above, we further recommend that these excavations be limited to a maximum length of 10 feet along the existing building footprint at any one time. Additional measures such as underpinning and/or shoring the existing foundations may be required in order to install the new foundations.

Alternatively, the existing fill materials and on-site soils could be densified with ground improvement such as with the use of rammed aggregate piers or similar before foundation construction. Such considerations are discussed in **Section 5.2**.

5.1.2 Shallow Foundation Design Parameters

Design parameters for shallow foundations supported on either new controlled fill or native soils are shown in **Table 6**.

Table 6. Shallow Foundation Design Parameters.

Design Parameter	Recommended Value
Net Allowable Soil Bearing Pressure	1,800 psf
Estimated Total Settlement	1-inch
Estimated Differential Settlement	½ inch
Minimum Exterior Foundation Depth	2 feet
Minimum Interior Foundation Depth	1-foot
Minimum Foundation Size(s)	1.5 feet (continuous) 2.5 feet (column)
Ultimate Friction Coefficient	0.35
Passive Lateral Earth Pressure Resistance	190 pcf

The net allowable bearing pressure is the bearing pressure in excess of the minimum surrounding overburden pressure at the foundation level. The net allowable soil bearing pressure may be increased by 1/3 for transient loads such as wind or seismic loads.

Exterior footings and footings in unheated areas should bear at the minimum depth recommended in **Table 6**. Minimum foundation depth is measured from the lowest adjacent final ground surface. In no case should footings have dimensions smaller than allowed by local building codes.

An ultimate soil-concrete friction coefficient of 0.35 may be used to evaluate sliding resistance of shallow foundations supported on undisturbed native soils or properly compacted structural fill.

Soft or otherwise unsuitable soils could be encountered during foundation construction. Therefore, foundation subgrades should be observed by an Olsson representative to identify such soils and provide remediation recommendations as necessary. After foundation subgrades have been observed and any required remedial measures are performed, concrete should be placed as quickly as possible to avoid exposure of the foundation subsoils to wetting, drying, or freezing. If foundation soils are subjected to such conditions, Olsson should be contacted to reevaluate the foundation bearing materials.

Provided shallow foundations are designed and constructed in accordance with the recommendations of this report, total post-construction settlements are anticipated to be less than the values tabulated in **Table 6**. Total settlement should be considered as differential settlement when designing connections between new and existing structures. To reduce the effects of differential settlement, floor slabs should be separated from wall and column footings with expansion joints.

5.2 Aggregate Piers

Consideration could be given to supporting the proposed structures on aggregate piers comprising rammed aggregate piers or vibro-stone columns to increase the allowable soil bearing pressure and reduce overall foundation sizes. Rammed aggregate piers or vibro-stone columns improve the shear strength of the existing ground conditions and reduce total and differential settlement of shallow foundations to required levels.

Rammed aggregate piers and vibro-stone column foundation systems are provided on a design-build basis, with design provided by a specialty foundation contractor. Complete structural foundation plans and a complete copy of this geotechnical report should be provided to the foundation contractor/designer to provide feasibility, design, and cost information.

The aggregate pier foundation system costs should include or identify equipment mobilization, installation of foundation elements, stabilization of the excavation (including addressing groundwater concerns), removal of any spoil piles, and preparation of specifications or

recommendations to ensure proper installation of the foundation elements and integration with the structural plans.

We estimate the allowable soil bearing pressure for shallow foundations bearing on aggregate piers installed in the on-site soils will be on the order of 3,000 to 5,000 psf, with total and differential settlements on the order of 1 inch and ½ inch, respectively. Please note however, that these values are for informational purposes only; the actual allowable soil bearing pressure and settlements must be determined by the aggregate pier designer.

5.3 Floor Slabs

Recommendations for design of concrete slab-on-grade floors, including preparation of the underlying subgrade, are presented below.

5.3.1 Floor Slab Subgrade Preparation

Based on the results of our exploration and engineering evaluation, we recommend floor slabs be supported by a minimum of 24 inches of low-plasticity structural fill. This structural fill thickness can be achieved through a combination of over-excavation and recompaction of site soils or structural fill placed to raise site grades.

Structural fill soils should extend 5 feet beyond the building perimeter and be moisture-conditioned and recompacted in accordance with **Section 4.2**.

5.3.2 Floor Slab Design Considerations

Care should be taken to maintain the recommended subgrade moisture content and density between site grading operations and placement of the floor slab. Periodic applications of water may be necessary to maintain the proper moisture content of the subgrade.

In many construction projects, floor slab areas are disturbed by construction equipment traffic and are exposed to the elements between completion of grading operations and placement of the floor slab. Therefore, we recommend that the final floor slab subgrade be proofrolled and evaluated for moisture content and density immediately prior to placement of the granular leveling course or floor slab concrete. Unsuitable soils should be moisture conditioned and recompacted in accordance with **Table 5** or be stabilized in accordance with **Section 4.2**.

Provided the recommendations presented in this report are implemented, a subgrade modulus of 100 pounds per square inch per inch (psi/in or pci) may be used to design the floor slab.

If a granular leveling and drainage course is used beneath floor slabs, the material should be free-draining, well-graded, and compacted in accordance with **Table 5** prior to slab placement.

In finished areas, the design engineer or architect should be consulted regarding the use and position (above or below the granular leveling course) of a vapor retarder. In other areas, vapor retarder should be placed in accordance with recommendations outlined in ACI 302.1R-15, “Guide to Concrete Floor and Slab Construction.”

The procedures recommended above will reduce future subgrade volume change and resultant floor slab movement. However, depending on many factors, including the size and shape of the floor area, the location of construction joints in the slab, the rigidity of the slab and foundation connection, and the magnitude of movement that occurs—cracks within the floor slab should be anticipated. Leaking utility lines or water allowed to accumulate beneath the slab could lead to significant slab movement.

5.4 Seismic Site Classification

For this project site, the soil conditions encountered at the boring are consistent with Site Class “D” as defined by ASCE 7-22. Our review of the site class is based on the soil conditions encountered in the borings during the exploration and our assumption that the encountered soil conditions are underlain by similar native materials to those encountered which extend to a depth of 100 feet.

5.5 Permanent Slopes

We recommend permanent cut or fill slopes be shallower than 3(H):1(V) to maintain long-term stability and to provide ease of maintenance. The crest or toe of cut or fill slopes should be at least 10 feet from any foundation and at least 5 feet from the edge of any pavements. Permanent slopes should be vegetated as soon as practical to minimize the potential for erosion. Slopes steeper than 3(H):1(V) are susceptible to erosion, will be difficult to maintain, and could experience problems with instability. Such slopes may require additional slope stability analysis, which is beyond the scope of this report.

The performance of the proposed structure and pavement depends on maintaining the moisture content of the subgrade soils throughout the life of the facility. To reduce the effects of moisture infiltration near the structure, efficient drainage of rainfall or surface runoff should be provided. We recommend a minimum slope of 2 percent for pavement areas and 5 percent for grass or landscaped areas.

5.6 Utilities and Landscaping

Bedding material below and above for site utilities should be in accordance with local building codes. The remaining utility trench should consist of cohesive structural fill placed in accordance

with **Table 5**. We also recommend clay plugs or water stops be installed where utility lines enter the building. Clay plugs should extend a minimum of 5 feet from the building exterior.

To reduce the effects of moisture fluctuations in and around the structure and pavements caused by landscaping and maintenance, we recommend the following:

- Downspout drainage should discharge onto splash blocks extending at least 5 feet away from the building.
- Incorporate splash blocks for external hose connections to prevent localized flooding of foundation or backfill soils. Cutoff valves should be installed inside the building to prevent unauthorized use of external hose connections.
- Restrict the type and location of landscaping vegetation around the proposed structure. Maintain a minimum distance between the structure and trees or shrubs equal to the mature radius of the tree or shrub plus 3 feet. Plant native and decorative grasses at least 5 feet from buildings. Poorly placed vegetation can result in settlement induced by desiccation or uplift caused by root growth. These recommendations may be modified in consultation with a landscape architect.
- Ensure that irrigation near the building is carefully controlled and minimized. Avoid installing sprinklers adjacent to foundation or retaining walls and inform building maintenance personnel of the importance of avoiding excessive watering.

6. PAVEMENT DESIGN

6.1 Pavement Subgrade Preparation

Proper pavement performance depends on a subgrade that is relatively uniform, with no abrupt changes in the degree of support. Non-uniform pavement support can result from variations in soil type or moisture content, as well as at the transition from cut to fill areas or where improperly placed utility backfill has been placed across or through pavement areas. Improper subgrade preparation such as inadequate vegetation removal, failure to identify soft or unstable areas by proofrolling, or inadequate compaction can also result in non-uniform subgrade support.

We recommend the proposed pavements be supported by a minimum of 12 inches of low-plasticity structural fill. This structural fill thickness can be achieved through a combination of over-excavation and recompaction of approved site soils or structural fill placed to raise site grades. Structural fill soils should extend 2 feet beyond the pavement edges and be moisture-conditioned and recompacted in accordance with **Section 4.2**.

Construction scheduling often produces a delay between completion of grading operations and commencement of paving operations. In these instances, pavement areas can be disturbed by construction equipment traffic, desiccation, or wetting. Therefore, we recommend that the final pavement subgrade be proofrolled and evaluated for moisture content and density immediately prior to paving. The proofroll should be performed with a loaded dump truck, motor grader, or similar rubber-tired equipment with a minimum weight of 20 tons. Unsuitable soils should be moisture conditioned and recompacted in accordance with **Table 5** or be stabilized in accordance with **Section 4.2**.

6.2 Recommended Pavement Sections

Pavement design is influenced by the anticipated traffic loads and volume, site subgrade conditions, pavement materials, and the desired design life. Changes in traffic conditions can have a significant impact on the service life of the pavement. Such changes could include increases in overall traffic counts, increases in truck traffic, or the unanticipated application of static or turning loads.

The recommended design sections require that the site be properly prepared in accordance with this report and that site drainage be provided to minimize the future wetting of the pavement subgrade.

The pavement recommendations presented below are based on the following parameters:

- Design Life: 20 years

- Design Traffic Load: 250,000 ESALs
- Initial Serviceability: 4.2
- Terminal Serviceability: 2.0
- Reliability: 75%
- Standard Deviation (Flexible/Rigid): 0.45/0.35
- Design CBR: 4.5
- Design k: 125 pci
- Drainage Coefficient: 1.0

Our recommended minimum pavement thicknesses are presented below. These minimum thicknesses are based on our experience with similar pavement applications and recognized structural coefficients.

Table 7. Recommended Pavement Sections.

	Layer	Material	Layer Thickness (inches)
			Access Roads & Parking Areas
Full Depth AC	1	AC Surface Course	2.0
	2	AC Base Course	5.0
	3	Subgrade, prepared in accordance with Section 6.1	12.0
AC w/Granular Base	1	AC Surface Course	3.0
	2	Aggregate Base Course	9.0
	3	Subgrade, prepared in accordance with Section 6.1	12.0
Portland Cement Concrete	1	PCC	6.0
	2	Aggregate Base Course	4.0
	3	Subgrade, prepared in accordance with Section 6.1	12.0

We recommend Portland cement concrete pavements be used in areas with frequent start-stop or turning traffic such as entrance and exit aprons or the parking stalls closest to buildings, as well as areas that support stationary loads such as dumpsters.

Surface drainage around the pavement and proper maintenance are also important for long-term performance. Curbs should be backfilled as soon as possible after construction of the pavement. Backfill should be compacted and should be sloped to prevent water from ponding and infiltration under the pavement. All pavement joints should be sealed, and any cracks should be quickly patched or sealed to prevent moisture from leaching into and softening the subgrade.

6.3 Exterior Flatwork

Cohesive subgrade soils immediately below exterior entryway slabs are considered moderately frost susceptible. If these soils become very moist or saturated and freeze, slab heaving could occur. Positive drainage away from the structure and entry slabs will help limit the potential for moisture infiltration into subgrade soils and subsequent heaving.

The potential for slab heaving adjacent to the buildings can be further limited by supporting exterior entry slabs on a structural stoop or removing and replacing the frost susceptible soils with non-frost-susceptible backfill. Such material typically consists of a well graded sand or crushed aggregate with less than 5 percent passing a #200 sieve.

If a structural stoop is considered to reduce or prevent movement during freeze/thaw cycles, the stoop foundation should extend to the frost depth recommended in **Section 5.1**. To further reduce slab movements adjacent to entryways, we recommend that frost-susceptible cohesive soils below the structural stoop slab be removed to frost depth and replaced with clean, free draining, well graded sand or crushed aggregate with less than 5 percent passing the #200 sieve. The base of the stoop excavation should be sloped to drain water away from the building. A perforated drainpipe should be installed at the low end of the excavation to collect accumulating moisture for discharge to an adjacent storm sewer.

Sidewalks located away from the building can be supported by a minimum of 9 inches of compacted structural fill that has been prepared and compacted following the recommendations of this report. Prepared subgrade should extend a minimum of 1 foot beyond each edge of sidewalks, where feasible.

7. REPORT LIMITATIONS

The conclusions and recommendations presented in this report are based on the information available regarding the proposed construction, geotechnical information obtained from our field exploration and laboratory testing, as well as our experience with similar projects. Our borings and testing represent a limited statistical sampling of the subsurface. Conditions may be encountered during construction that are substantially different from those encountered in this exploration and adjustments to design and construction may be necessary.

In the event of any changes in the nature of the proposed project as outlined in this report, the opinions in this report cannot be considered valid unless Olsson reviews the changes, and the opinions of this report are modified or affirmed by Olsson.

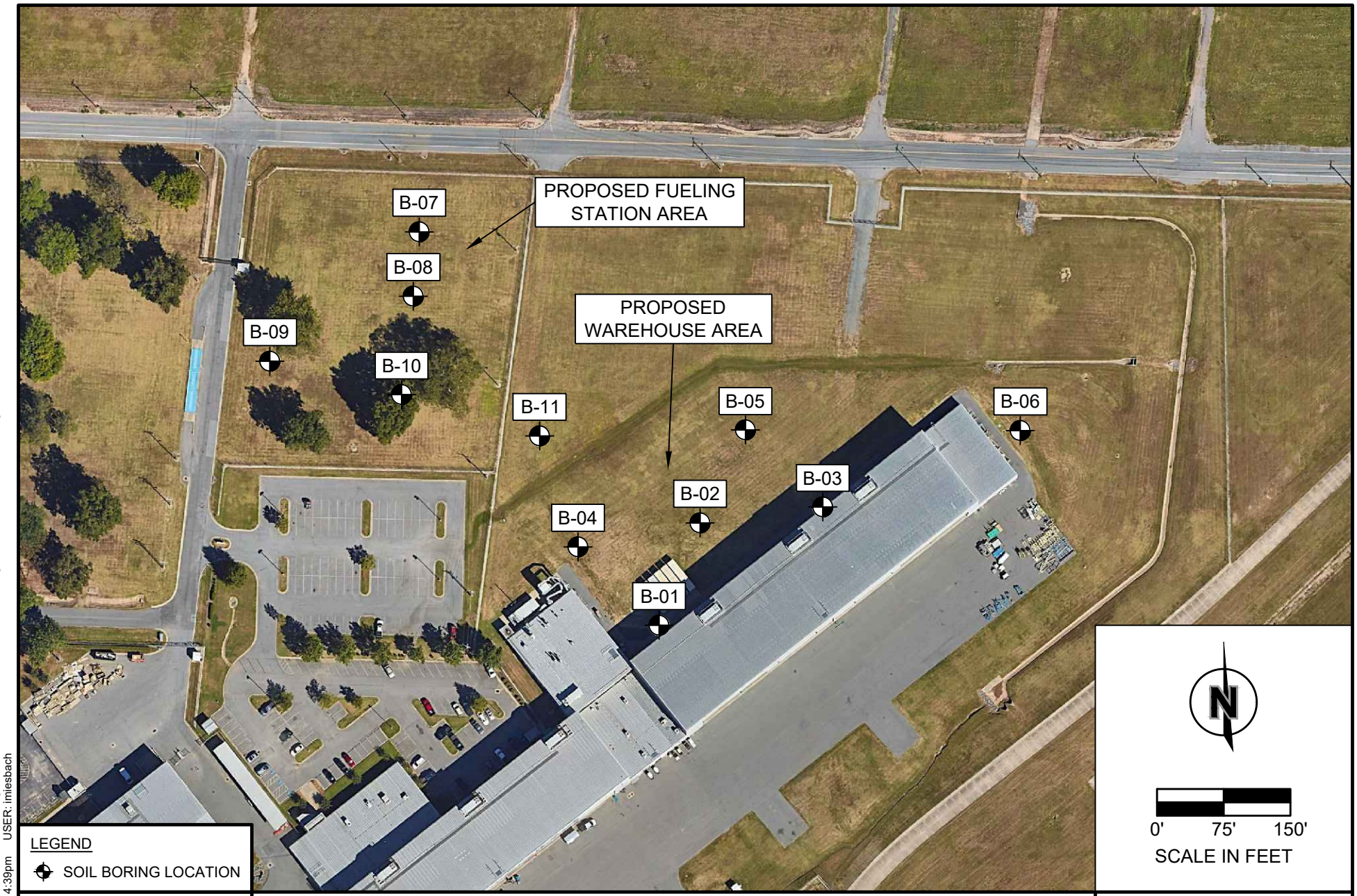
The scope of this exploration did not include any environmental assessment for the presence of wetlands and/or hazardous or toxic materials in the soil or groundwater on or near the site. Any statements in this report regarding odors, discoloration, or suspicious conditions are strictly for the information of our client.

This report is based on generally accepted professional geotechnical engineering practice at the time of this report, within this geographic area. No warranty, express or implied, is intended or made. This report has been prepared for the exclusive use of CDI Contractors and their authorized representatives for specific application to the discussed project.

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APPENDIX A

Exploration Maps, Logs, and Information



LEGEND

SOIL BORING LOCATION

PROJECT NO:	025-03787
DRAWN BY:	IDM
DATE:	09.01.2026

BORING LOCATION MAP
DFJ WAREHOUSE AND FUELING STATION
LITTLE ROCK, ARKANSAS

olsson

F:\2025\03501-04000\025-03787\40-Design\Reports\GEO\DWG\26-09-01_GEO_Boring Location Map_025-03787.dwg
DATE: Sep 01, 2026 4:39pm USER: imiesbach

BORING LOG NO. B-01

PROJECT NAME	CLIENT
DFJ Warehouse and Fueling Station	CDI Contractors, LLC
PROJECT NUMBER	**LOCATION**
025-03787	Little Rock, Arkansas

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	GRAVEL SURFACING, 12 inches thick (1.0')		1								
	FILL- predominately sandy silt, loose, brown, dry (2.5')		2	SPT-1		5-4-5 (9)		9.5			
	LEAN CLAY (CL), soft to stiff, brown, moist to very moist		3								
-5.0			4	SPT-2		3-2-3 (5)		22.0			
			5								
			6								
			7	SPT-3		2-2-2 (4)		24.7			
			8								
			9	SPT-4		3-7-5 (12)		27.6			
-10.0	(10.0')		10								
	SILT WITH SAND (ML), loose, brown, slightly moist (12.5')		11								
			12	SPT-5	ML	4-5-4 (9)		14.8		NP	P-200 = 80%
	SILTY SAND (SM), medium dense, brown, moist (15.0')		13								
			14	SPT-6		4-4-8 (12)		20.1			
-15.0	POORLY GRADED SAND (SP), medium dense to dense, light brown, dry to wet		15								
			16								
			17								
			18								
			19	SPT-7		13-18-22 (40)		3.0			
-20.0			20								
			21								
			22								
	▼		23								
	(25.0')		24	SPT-8		3-4-6 (10)		24.1			
-25.0	**BASE OF BORING AT 25.0 FEET**		25								
			26								
			27								
			28								
			29								
-30.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	23.0 ft
IAD	▼	23.0 ft
AD	▼	Not Performed

olsson

STARTED:	08/11/2026	FINISHED:	08/11/2026
DRILL CO.:	OLSSON	EQUIPMENT:	CME 55
DRILLER:	AK	LOGGED BY:	MV
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-02

Sheet 1 of 1

PROJECT NAME	CLIENT
DFJ Warehouse and Fueling Station	CDI Contractors, LLC
PROJECT NUMBER	**LOCATION**
025-03787	Little Rock, Arkansas

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	ROOT ZONE, 7 inches thick (0.6')		1								
	GRAVEL SURFACING, 5 inches thick (1.0')										
	FILL- predominately sandy silt, loose, light brown, dry (2.3')		2	SPT-1		7-4-3 (7)		13.6			P-200 = 48.3%
	POSSIBLE FILL- predominately silt, loose, light brown, dry		3								
			4	SPT-2		3-3-3 (6)		18.5			
-5.0			5								
	(6.0')		6								
	SILTY CLAY (CL-ML), soft to stiff, light brown, moist		7	SPT-3		2-2-2 (4)		22.0			
			8								
	(10.0')		9	SPT-4		3-4-5 (9)		23.6			
-10.0	SILTY CLAY WITH SAND (CL-ML), stiff, light brown, moist		10								
	(12.5')		11								
	SILTY CLAY (CL-ML), stiff, brown, moist		12	SPT-5		3-4-5 (9)		24.0			
	(15.0')		13								
			14	SPT-6		4-4-5 (9)		21.7			
-15.0	POORLY GRADED SAND (SP), medium dense, light brown, dry to wet		15								
			16								
			17								
			18								
			19	SPT-7		7-11-14 (25)					
-20.0			20								
			21								
			22								
	▼		23								
			24	SPT-8		5-9-13 (22)					
-25.0	(25.0')		25								
	BASE OF BORING AT 25.0 FEET		26								
			27								
			28								
			29								
-30.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	22.5 ft
IAD	▼	22.5 ft
AD	▼	Not Performed

olsson

STARTED:	08/11/2026	FINISHED:	08/11/2026
DRILL CO.:	OLSSON	EQUIPMENT:	CME 55
DRILLER:	AK	LOGGED BY:	MV
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-03

PROJECT NAME	CLIENT
DFJ Warehouse and Fueling Station	CDI Contractors, LLC
PROJECT NUMBER	**LOCATION**
025-03787	Little Rock, Arkansas

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	GRAVEL SURFACING, 4 inches thick (0.3')		1								
	FILL- predominately sandy silt, medium dense, brown, dry (2.5')		2	SPT-1		8-7-8 (15)		14.6			
	FAT CLAY (CH), firm, brown, moist to very moist		3								
			4	SPT-2		5-3-2 (5)		29.9			
-5.0			5								
			6								
			7	ST-3	CH			21.8 21.5	101.5	53/36	P-200 = 99.3%
	(8.0')		8								
	SILTY CLAY (CL-ML), firm, brown, slightly moist		9	SPT-4		3-4-4 (8)		21.5			
-10.0			10								
			11								
	(12.5')		12	SPT-5		2-2-4 (6)		23.1			
	SANDY SILT (ML), loose, brown, slightly moist		13								
	(15.0')		14	SPT-6		3-2-4 (6)		20.8			
-15.0	SILTY SAND (SM), loose, brown, slightly moist to wet		15								
			16								
			17								
			18								
			19	SPT-7		4-3-5 (8)		23.0			
-20.0			20								
			21								
			22								
			23								
	(25.0')		24	SPT-8		2-2-2 (4)		22.4			
-25.0	**BASE OF BORING AT 25.0 FEET**		25								
			26								
			27								
			28								
			29								
-30.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	22.5 ft
IAD	▼	22.5 ft
AD	⧖	Not Performed

olsson

STARTED:	08/11/2026	FINISHED:	08/11/2026
DRILL CO.:	OLSSON	EQUIPMENT:	CME 55
DRILLER:	AK	LOGGED BY:	MV
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-04

Sheet 1 of 1

PROJECT NAME	CLIENT
DFJ Warehouse and Fueling Station	CDI Contractors, LLC
PROJECT NUMBER	**LOCATION**
025-03787	Little Rock, Arkansas

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	ROOT ZONE, 7 inches thick 0.6'		1								
	POSSIBLE FILL- predominately silty clay, firm to stiff, brown, dry		2	SPT-1		8-4-5 (9)		11.7			
			3								
			4	SPT-2		2-4-5 (9)		27.7			
-5.0			5								
			6								
			7	SPT-3		3-2-3 (5)		17.0			
	7.5'		8								
	SILT (ML), loose, brown, very moist		9	SPT-4		4-4-4 (8)		25.4			
-10.0	10.0'		10								
	BASE OF BORING AT 10.0 FEET		11								
			12								
			13								
			14								
-15.0			15								
			16								
			17								
			18								
			19								
-20.0			20								
			21								
			22								
			23								
			24								
-25.0			25								
			26								
			27								
			28								
			29								
-30.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	▼	Not Performed

olsson

STARTED:	08/11/2026	FINISHED:	08/11/2026
DRILL CO.:	OLSSON	EQUIPMENT:	CME 55
DRILLER:	AK	LOGGED BY:	MV
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-05

PROJECT NAME	CLIENT
DFJ Warehouse and Fueling Station	CDI Contractors, LLC
PROJECT NUMBER	**LOCATION**
025-03787	Little Rock, Arkansas

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	ROOT ZONE, 7 inches thick 0.6'		1								
	POSSIBLE FILL- predominately silty clay, stiff, brown, dry 2.5'		2	SPT-1		7-6-7 (13)		17.0			
	POSSIBLE FILL- predominantly fat clay, stiff, brown, dry		3								
			4	ST-2	CH			24.1	99.7	67/47	P-200 = 98.0%
-5.0			5					23.7			
			6								
			7	SPT-3		3-4-5 (9)		23.8			
	SILT (ML), loose, brown, dry 7.5'		8								
			9	SPT-4		3-3-2 (5)		19.6			
-10.0	BASE OF BORING AT 10.0 FEET 10.0'		10								
			11								
			12								
			13								
			14								
-15.0			15								
			16								
			17								
			18								
			19								
-20.0			20								
			21								
			22								
			23								
			24								
-25.0			25								
			26								
			27								
			28								
			29								
-30.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	▼	Not Performed

olsson

STARTED:	08/11/2026	FINISHED:	08/11/2026
DRILL CO.:	OLSSON	EQUIPMENT:	CME 55
DRILLER:	AK	LOGGED BY:	MV
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-06

PROJECT NAME	CLIENT
DFJ Warehouse and Fueling Station	CDI Contractors, LLC
PROJECT NUMBER	**LOCATION**
025-03787	Little Rock, Arkansas

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	ROOT ZONE, 7 inches thick 0.6'		1								
	FILL- predominantly sandy silt, medium dense, brown, dry 2.5'		2	SPT-1		7-9-8 (17)		4.3			
	SILTY CLAY (CL-ML), firm, brown, dry		3								
			4	SPT-2		2-2-3 (5)		24.7			
-5.0	6.0'		5								
	FAT CLAY (CH), stiff, brown, dry		6								
			7	ST-3	CH		2.1	25.5 28.5	95.6	71/52	P-200 = 99.0%
			8								
			9	SPT-4		3-4-6 (10)		19.5			
-10.0	10.0'		10								
	BASE OF BORING AT 10.0 FEET		11								
			12								
			13								
			14								
-15.0			15								
			16								
			17								
			18								
			19								
-20.0			20								
			21								
			22								
			23								
			24								
-25.0			25								
			26								
			27								
			28								
			29								
-30.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	▼	Not Performed

olsson

STARTED:	08/11/2026	FINISHED:	08/11/2026
DRILL CO.:	OLSSON	EQUIPMENT:	CME 55
DRILLER:	AK	LOGGED BY:	MV
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-07

PROJECT NAME	CLIENT
DFJ Warehouse and Fueling Station	CDI Contractors, LLC
PROJECT NUMBER	**LOCATION**
025-03787	Little Rock, Arkansas

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	ROOT ZONE, 8 inches thick 0.7'		1								
	FILL- predominately silty clay, firm, brown, dry		2	SPT-1		3-2-3 (5)		7.5			
	3.5'		3								
	SILT (ML), loose, brown, dry		4	SPT-2		3-2-2 (4)		11.6			
	5.0'		5								
-5.0	SANDY SILT (ML), loose to medium dense, brown, dry		6								
			7	SPT-3		2-2-2 (4)		12.4			P-200 = 64.9%
			8								
			9	SPT-4		2-2-3 (5)		20.7			
-10.0			10								
			11								
			12	SPT-5		4-5-7 (12)		22.6			
			13								
			14	SPT-6		5-5-8 (13)		17.7			
-15.0			15								
	POORLY GRADED SAND (SP), loose to medium dense, brown, wet		16								
			17								
			18								
			19	SPT-7		7-7-11 (18)		13.4			P-200 = 6.7%
-20.0			20								
			21								
			22								
			23								
			24	SPT-8		2-3-3 (6)		15.9			
	25.0'		25								
-25.0	**BASE OF BORING AT 25.0 FEET**		26								
			27								
			28								
			29								
-30.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	18.0 ft
IAD	▼	19.0 ft
AD	▼	Not Performed

olsson

STARTED:	08/11/2026	FINISHED:	08/11/2026
DRILL CO.:	OLSSON	EQUIPMENT:	CME 55
DRILLER:	AK	LOGGED BY:	MV
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-08

Sheet 1 of 1

PROJECT NAME	CLIENT
DFJ Warehouse and Fueling Station	CDI Contractors, LLC
PROJECT NUMBER	**LOCATION**
025-03787	Little Rock, Arkansas

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	ROOT ZONE, 8 inches thick 0.7'		1								
	FILL- predominately silty clay with varying amounts of sand, firm, brown, dry to wet		2	SPT-1		4-3-2 (5)		7.6			
			3								
			4	SPT-2		4-4-4 (8)		22.0			
-5.0			5								
	6.0'		6								
	SILTY CLAY (CL-ML), medium stiff, brown, dry to wet		7	SPT-3		2-3-3 (6)		34.0			
			8								
	10.0'		9	SPT-4		3-3-4 (7)		8.9			
-10.0	**BASE OF BORING AT 10.0 FEET**		10								
			11								
			12								
			13								
			14								
-15.0			15								
			16								
			17								
			18								
			19								
-20.0			20								
			21								
			22								
			23								
			24								
-25.0			25								
			26								
			27								
			28								
			29								
-30.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	6.0 ft
IAD	▼	6.0 ft
AD	▼	Not Performed

olsson

STARTED:	08/11/2026	FINISHED:	08/11/2026
DRILL CO.:	OLSSON	EQUIPMENT:	CME 55
DRILLER:	AK	LOGGED BY:	MV
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-09

Sheet 1 of 1

PROJECT NAME	CLIENT
DFJ Warehouse and Fueling Station	CDI Contractors, LLC
PROJECT NUMBER	**LOCATION**
025-03787	Little Rock, Arkansas

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	ROOT ZONE, 8 inches thick 0.7'		1								
	FILL- predominately silty clay with varying amounts of sand, firm to stiff, brown, dry		2	SPT-1		4-4-4 (8)		19.9			
			3								
			4	SPT-2		7-6-5 (11)		13.2			
-5.0	5.0'		5								
	CLAYEY SAND (SC), loose, brown, dry		6								
	7.5'		7	SPT-3		4-4-3 (7)		15.5			
	SILTY SAND (SM), loose, brown, dry		8								
	10.0'		9	SPT-4		2-3-4 (7)		12.0			
-10.0	**BASE OF BORING AT 10.0 FEET**		10								
			11								
			12								
			13								
			14								
-15.0			15								
			16								
			17								
			18								
			19								
-20.0			20								
			21								
			22								
			23								
			24								
-25.0			25								
			26								
			27								
			28								
			29								
-30.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	▼	Not Performed

olsson

STARTED:	08/11/2026	FINISHED:	08/11/2026
DRILL CO.:	OLSSON	EQUIPMENT:	CME 55
DRILLER:	AK	LOGGED BY:	MV
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-10

Sheet 1 of 1

PROJECT NAME	CLIENT
DFJ Warehouse and Fueling Station	CDI Contractors, LLC
PROJECT NUMBER	**LOCATION**
025-03787	Little Rock, Arkansas

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	ROOT ZONE, 8 inches thick 0.7'		1								
	FILL- predominately lean clay with sand, stiff to very stiff, brown, dry		2	SPT-1		4-7-5 (12)		13.8			
			3								
			4	SPT-2		7-7-9 (16)		13.0			
-5.0	5.0'		5								
	CLAYEY SAND (SC), medium dense, dry		6								
			7	SPT-3		8-8-8 (16)		7.4			
			8								
			9	SPT-4		3-4-6 (10)		11.2			
-10.0	10.0'		10								
	BASE OF BORING AT 10.0 FEET		11								
			12								
			13								
			14								
-15.0			15								
			16								
			17								
			18								
			19								
-20.0			20								
			21								
			22								
			23								
			24								
-25.0			25								
			26								
			27								
			28								
			29								
-30.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	▼	Not Performed

olsson

STARTED:	08/11/2026	FINISHED:	08/11/2026
DRILL CO.:	OLSSON	EQUIPMENT:	CME 55
DRILLER:	AK	LOGGED BY:	MV
METHOD:	Continuous Flight Auger		

BORING LOG NO. B-11

Sheet 1 of 1

PROJECT NAME	CLIENT
DFJ Warehouse and Fueling Station	CDI Contractors, LLC
PROJECT NUMBER	**LOCATION**
025-03787	Little Rock, Arkansas

ELEVATION (ft)	MATERIAL DESCRIPTION	GRAPHIC LOG	DEPTH (ft)	SAMPLE TYPE NUMBER	CLASSIFICATION (USCS)	BLOWS/6" (N-VALUE)	UNC STR (tsf)	MOISTURE (%)	DRY DENSITY (pcf)	LL/PI (%)	ADDITIONAL DATA/ REMARKS
	ROOT ZONE 0.6'		1								
	FILL- predominately lean clay, soft to firm, brown, dry		2	SPT-1		5-3-2 (5)					
			3								
			4	SPT-2		2-2-2 (4)					
-5.0	6.0'		5								
	SILTY SAND (SM), loose, brown, moist		6								
			7	SPT-3		3-2-5 (7)					
			8								
			9	SPT-4		3-2-3 (5)					
-10.0	10.0'		10								
	BASE OF BORING AT 10.0 FEET		11								
			12								
			13								
			14								
-15.0			15								
			16								
			17								
			18								
			19								
-20.0			20								
			21								
			22								
			23								
			24								
-25.0			25								
			26								
			27								
			28								
			29								
-30.0			30								
			31								
			32								
			33								
			34								

WATER LEVEL OBSERVATIONS		
WD	▽	Not Encountered
IAD	▼	Not Encountered
AD	⧖	Not Performed

olsson

STARTED:	08/11/2026	FINISHED:	08/11/2026
DRILL CO.:	OLSSON	EQUIPMENT:	CME 55
DRILLER:	AK	LOGGED BY:	MV
METHOD:	Continuous Flight Auger		

Field Exploration

Our drill crew advanced the borings for this exploration with a truck-mounted drill rig using continuous-flight augers. Boring locations were located in the field by the drill crew using a hand-held GPS unit. The approximate locations of the borings are shown on the Boring Location Map. Borings with the “A” designation are additional offset borings of the original boring location that were performed in order to collect Shelby tube samples. Generally, offsets are 2 to 5 feet within the original boring location.

Samples were obtained using the methods and at the depths shown on the logs. Recovered samples were sealed in containers, labeled, and protected for transportation to the laboratory for testing.

The drill crew prepared field boring logs during drilling operations. The field logs include drilling and sampling methods, sampling intervals, groundwater measurements, and general descriptions of the observed soil conditions. The final boring logs represent our engineering interpretation of the field logs based on visual classification and laboratory testing of the collected samples.

APPENDIX B

Laboratory Test Results

SUMMARY OF LABORATORY RESULTS

PROJECT NAME: DFJ Warehouse and Fueling Station
PROJECT NUMBER: 025-03787
CLIENT: CDI Contractors, LLC
PROJECT LOCATION: Little Rock, Arkansas

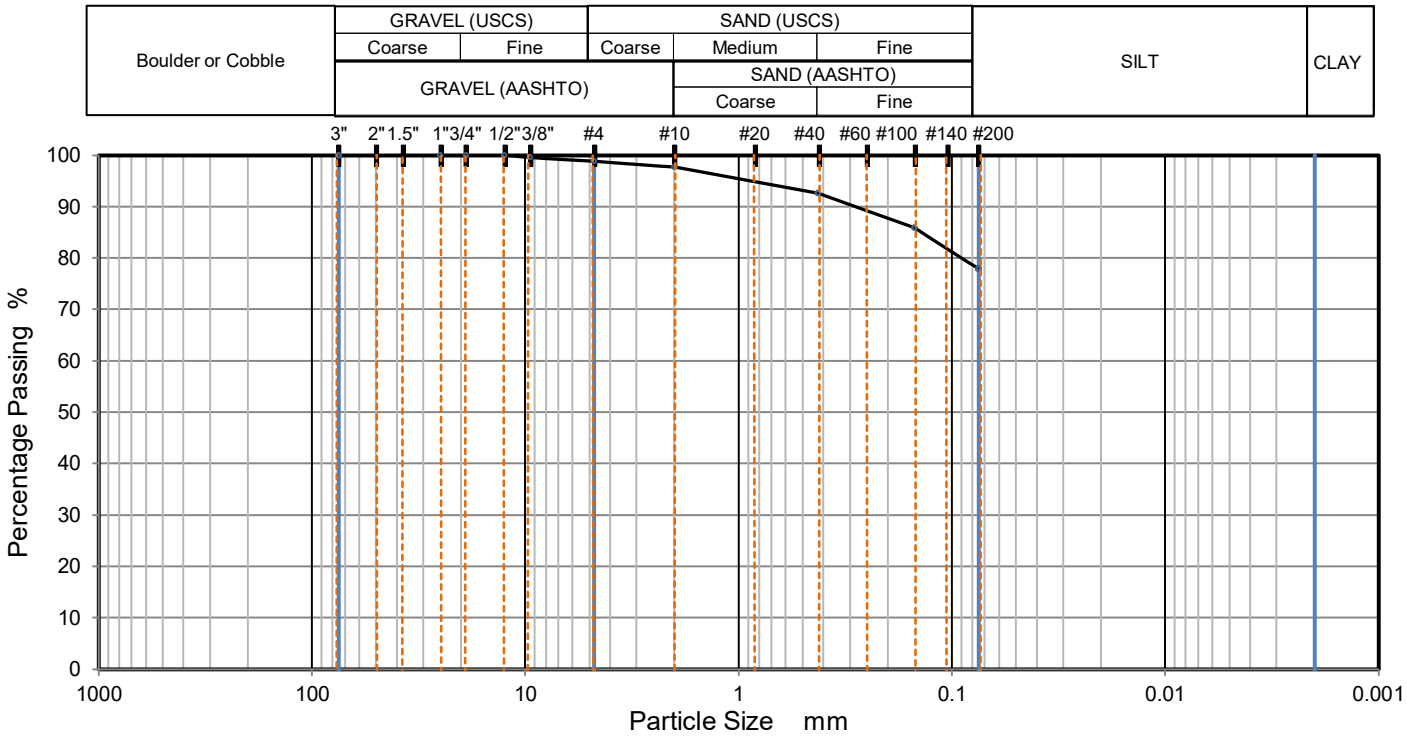
BORING NUMBER	SAMPLE ID	SAMPLE TYPE	SAMPLE DEPTH (FT)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	VOID RATIO	SATURATION (%)	UNCONFINED STRENGTH (tsf)	STRAIN (%)	ATTERBERG LIMITS			P-200	USCS CLASS
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX		
B-01	1	SPT	1 - 2.5	9.5										
B-01	2	SPT	3.5 - 5	22.0										
B-01	3	SPT	6 - 7.5	24.7										
B-01	4	SPT	8.5 - 10	27.6										
B-01	5	SPT	11 - 12.5	14.8						NP	NP	NP	80.0	ML
B-01	6	SPT	13.5 - 15	20.1										
B-01	7	SPT	18.5 - 20	3.0										
B-01	8	SPT	23.5 - 25	24.1										
B-01A	1	ST	3 - 3.5	10.1	101.6	0.629	42.6	1.8	8.2	36	20	16	95.2	
B-02	1	SPT	1 - 2.5	13.6									48.3	
B-02	2	SPT	3.5 - 5	18.5										
B-02	3	SPT	6 - 7.5	22.0										
B-02	4	SPT	8.5 - 10	23.6										
B-02	5	SPT	11 - 12.5	24.0										
B-02	6	SPT	13.5 - 15	21.7										
B-02A	1	ST	6 - 6.75	15.8	100.0	0.654	64.0			29	22	7	90.9	
B-03	1	SPT	1 - 2.5	14.6										
B-03	2	SPT	3.5 - 5	29.9										
B-03	3	ST	6 - 8	21.8	101.5	0.629	91.8			53	17	36	99.3	
B-03	4	SPT	8.5 - 10	21.5										
B-03	5	SPT	11 - 12.5	23.1										
B-03	6	SPT	13.5 - 15	20.8										
B-03	7	SPT	18.5 - 20	23.0										
B-03	8	SPT	23.5 - 25	22.4										
B-04	1	SPT	1 - 2.5	11.7										
B-04	2	SPT	3.5 - 5	27.7										
B-04	3	SPT	6 - 7.5	17.0										
B-04	4	SPT	8.5 - 10	25.4										
B-04 BULK	1	AU	1 - 5	8.2						NP	NP	NP	77.9	ML
B-05	1	SPT	1 - 2.5	17.0										
B-05	2	ST	3 - 5	24.1	99.7	0.659	96.9			67	20	47	98.0	
B-05	3	SPT	6 - 7.5	23.8										
B-05	4	SPT	8.5 - 10	19.6										
B-05 BULK	1	AU	1 - 5	8.2						NP	NP	NP	73.6	ML
B-06	1	SPT	1 - 2.5	4.3										

SUMMARY OF LABORATORY RESULTS

PROJECT NAME: DFJ Warehouse and Fueling Station
PROJECT NUMBER: 025-03787
CLIENT: CDI Contractors, LLC
PROJECT LOCATION: Little Rock, Arkansas

BORING NUMBER	SAMPLE ID	SAMPLE TYPE	SAMPLE DEPTH (FT)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	VOID RATIO	SATURATION (%)	UNCONFINED STRENGTH (tsf)	STRAIN (%)	ATTERBERG LIMITS			P-200	USCS CLASS
										LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX		
B-06	2	SPT	3.5 - 5	24.7										
B-06	3	ST	6 - 8	25.5	95.6	0.731	92.5	2.1	9.2	71	19	52	99.0	
B-06	4	SPT	8.5 - 10	19.5										
B-07	1	SPT	1 - 2.5	7.5										
B-07	2	SPT	3.5 - 5	11.6										
B-07	3	SPT	6 - 7.5	12.4									64.9	
B-07	4	SPT	8.5 - 10	20.7										
B-07	5	SPT	11 - 12.5	22.6										
B-07	6	SPT	13.5 - 15	17.7										
B-07	7	SPT	18.5 - 20	13.4									6.7	
B-07	8	SPT	23.5 - 25	15.9										
B-07A	1	ST	3 - 3.58	13.8	101.8	0.625	58.5	0.5	3.8	NP	NP	NP	81.4	
B-07A	2	ST	8 - 9.96	15.0	101.1	0.637	62.5	0.3	2.4	NP	NP	NP	61.0	
B-08	1	SPT	1 - 2.5	7.6										
B-08	2	SPT	3.5 - 5	22.0										
B-08	3	SPT	6 - 7.5	34.0										
B-08	4	SPT	8.5 - 10	8.9										
B-08 BULK	1	AU	1 - 5	7.9						NP	NP	NP	86.8	ML
B-09	1	SPT	1 - 2.5	19.9										
B-09	2	SPT	3.5 - 5	13.2										
B-09	3	SPT	6 - 7.5	15.5										
B-09	4	SPT	8.5 - 10	12.0										
B-10	1	SPT	1 - 2.5	13.8										
B-10	2	SPT	3.5 - 5	13.0										
B-10	3	SPT	6 - 7.5	7.4										
B-10	4	SPT	8.5 - 10	11.2										

	PARTICLE SIZE DISTRIBUTION				Job Ref	025-03787
					Borehole / Pit No	B-04 BULK
Site Name	**DFJ Warehouse and Fueling Station**				Sample No	1
Soil Description	SILT (ML), with Sand, Brown				Depth	1.00 ft
Specimen Ref.	B-04 BULK_1	Specimen Depth	1.00	ft	Sample Type	AU
Test Method	ASTM D6913; Method B				lab ID	OKCF2026081728



TEST RESULTS (ASTM D6913; METHOD B)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	99.6		
#4	98.8		
#8	98.0		
#10	97.7		
#16	97.1		
#30	95.3		
#40	92.6		
#50	89.7		
#100	85.9		
#200	77.9		

Dry Mass of sample, g: 299.2

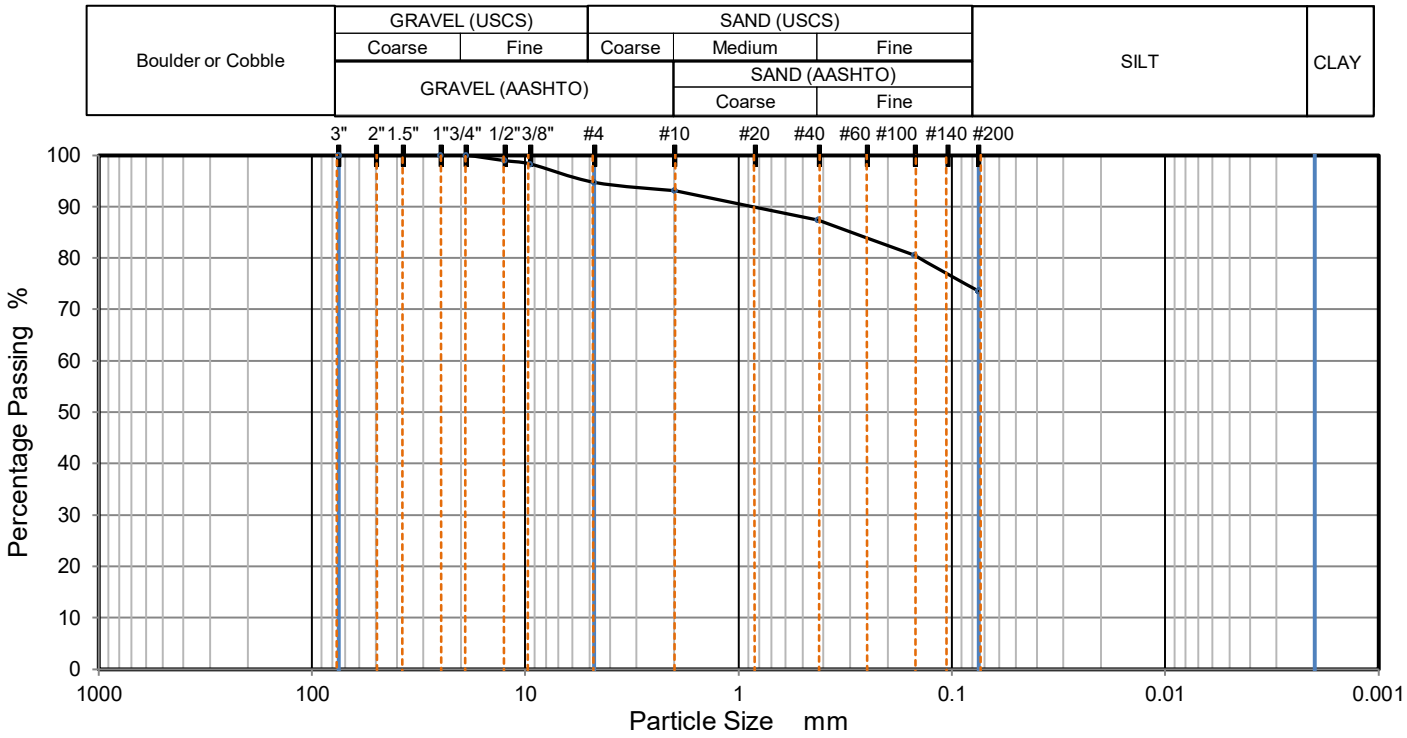
Sample Proportions	% dry mass USCS	% dry mass AASHTO
Boulder or Cobble	0.0	0.0
Gravel	1.2	2.3
Coarse Sand	1.1	5.1
Medium Sand	5.1	--
Fine Sand	14.7	14.7
Fines <#200	77.9	77.9

AASHTO	A-4	Liquid Limit	NP	D90	0.312	D50	--	D10	--
USCS Symbol	ML	Plastic Limit	NP	D85	0.139	D30	--	Cu	--
USCS Group Name	Silt with sand	Plasticity Index	NP	D60	--	D15	--	Cc	--

Remarks

--

	PARTICLE SIZE DISTRIBUTION			Job Ref	**025-03787**
				Borehole / Pit No	B-05 BULK
Site Name	**DFJ Warehouse and Fueling Station**			Sample No	1
Soil Description	SILT (ML), with Sand, Light Brown			Depth	1.00 ft
Specimen Ref.	B-05 BULK_1	Specimen Depth	1.00 ft	Sample Type	AU
Test Method	ASTM D6913; Method B			lab ID	OKCF2026081733



TEST RESULTS (ASTM D6913; METHOD B)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0		
1"	100.0		
3/4"	100.0		
1/2"	99.0		
3/8"	98.3		
#4	94.8		
#8	93.4		
#10	93.1		
#16	92.2		
#30	90.2		
#40	87.5		
#50	84.3		
#100	80.5		
#200	73.6		

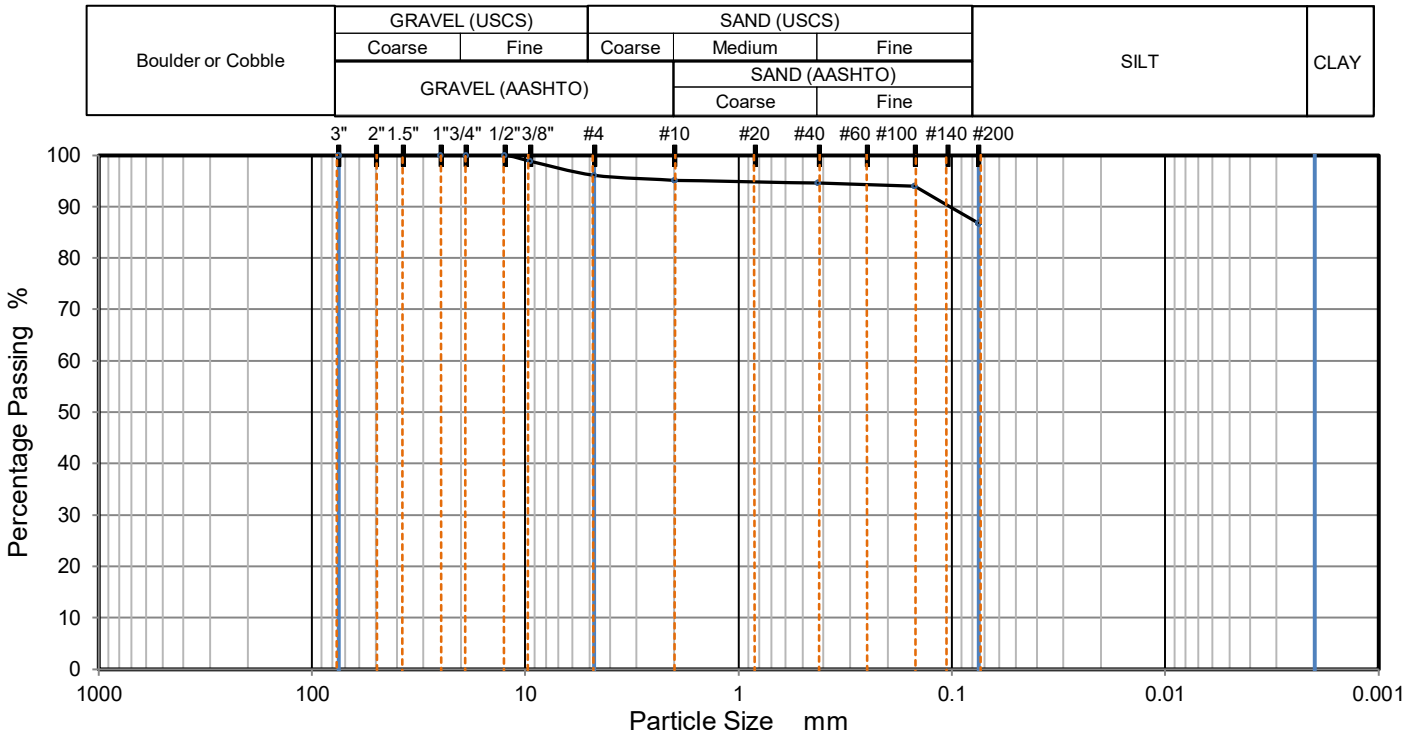
Dry Mass of sample, g: 310.5

Sample Proportions	% dry mass USCS	% dry mass AASHTO
Boulder or Cobble	0.0	0.0
Gravel	5.3	6.9
Coarse Sand	1.6	5.6
Medium Sand	5.6	--
Fine Sand	13.9	13.9
Fines <#200	73.6	73.6

AASHTO	A-4	Liquid Limit	NP	D90	0.585	D50	--	D10	--
USCS Symbol	ML	Plastic Limit	NP	D85	0.324	D30	--	Cu	--
USCS Group Name	Silt with sand	Plasticity Index	NP	D60	--	D15	--	Cc	--

Remarks
--

	PARTICLE SIZE DISTRIBUTION			Job Ref	**025-03787**
				Borehole / Pit No	B-08 BULK
Site Name	**DFJ Warehouse and Fueling Station**			Sample No	1
Soil Description	SILT (ML), Light Brown			Depth	1.00 ft
Specimen Ref.	B-08 BULK_1	Specimen Depth	1.00 ft	Sample Type	AU
Test Method	ASTM D6913; Method A			lab ID	OKCF2026081752



TEST RESULTS (ASTM D6913; METHOD A)

Sieving		Hydrometer Sedimentation	
Particle Size	% Passing	Particle Size mm	% Passing
3"	100		
1"	100		
3/4"	100		
1/2"	100		
3/8"	99		
#4	96		
#8	95		
#10	95		
#16	95		
#30	95		
#40	95		
#50	94		
#100	94		
#200	87		

Dry Mass of sample, g: 341.2

Sample Proportions	% dry mass USCS	% dry mass AASHTO
Boulder or Cobble	0	0
Gravel	4	5
Coarse Sand	1	1
Medium Sand	1	--
Fine Sand	8	8
Fines <#200	87	87

AASHTO	A-4	Liquid Limit	NP	D90	0.102	D50	--	D10	--
USCS Symbol	ML	Plastic Limit	NP	D85	--	D30	--	Cu	--
USCS Group Name	Silt	Plasticity Index	NP	D60	--	D15	--	Cc	--

Remarks

--

Unconfined Compressive Strength Test

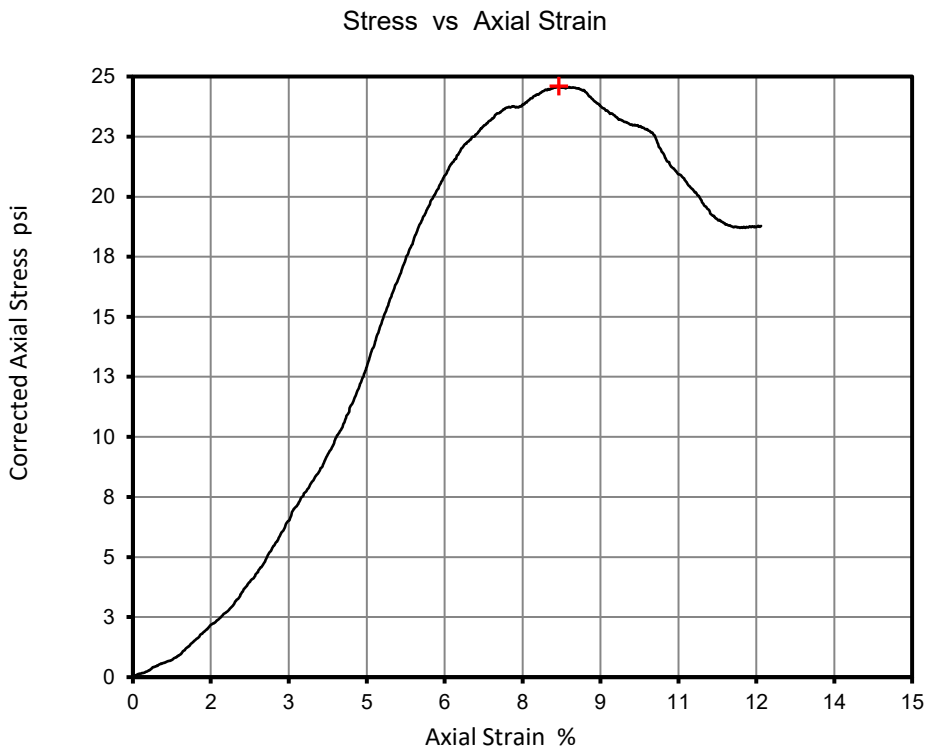
Job Ref	025-03787
Borehole/Pit No.	B-01A

Site Name	DFJ Warehouse and Fueling Station	Sample No.	1
Specimen Description	LEAN CLAY (CL), Brown	Depth	3.00
		Sample Type	ST
		LAB ID	OKCF202608178
		Date of test	08/18/26

Initial Conditions

			Trimmings
Height	in	3.88	
Diameter	in	2.68	
Bulk Density	pcf	113.7	
Water Content	%	12.0	
Dry Density	pcf	101.6	
Voids Ratio		0.628	
Degree of Saturation	%	50.5	

Rate of Strain applied			1.0
At failure	Axial Strain	%	8.2
	Maximum Stress	psi	24.6



Failure Picture



Remarks

Fig. No. 1

Sheet 1

Unconfined Compressive Strength Test

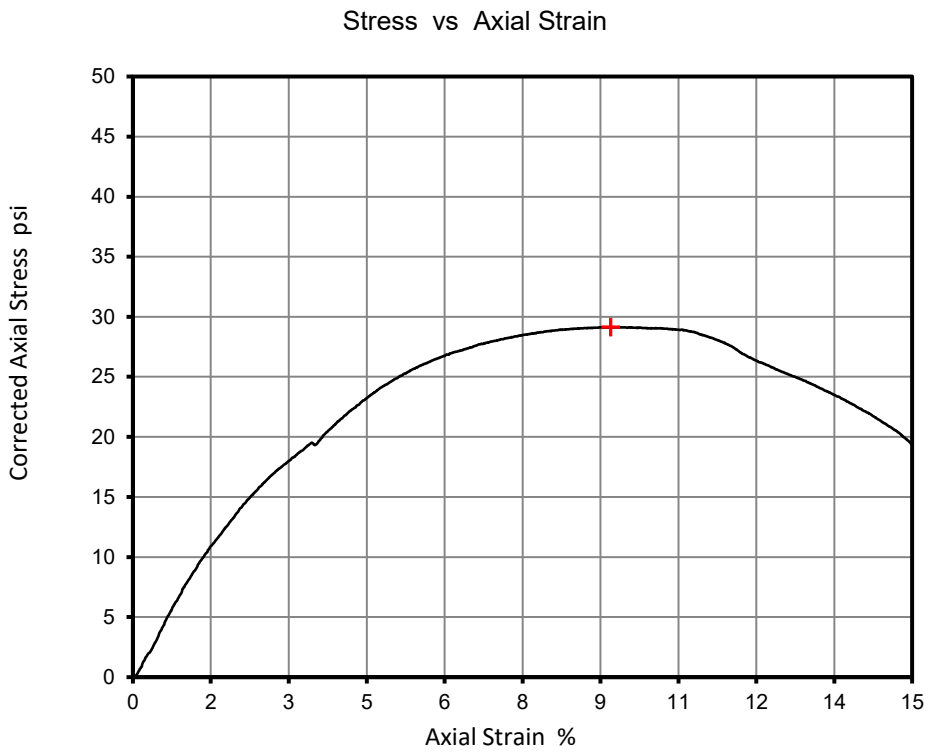
Job Ref	025-03787
Borehole/Pit No.	B-06

Site Name	DFJ Warehouse and Fueling Station	Sample No.	3
Specimen Description	FAT CLAY (CH), Brown	Depth	6.00
		Sample Type	ST
		LAB ID	OKCF2026081737
		Date of test	08/18/26

Initial Conditions

Height	in	5.73	
Diameter	in	2.83	
Bulk Density	pcf	122.8	
Water Content	%	28.5	Trimmings
Dry Density	pcf	95.6	
Voids Ratio		0.730	
Degree of Saturation	%	103.5	

Rate of Strain applied			1.0
At failure	Axial Strain	%	9.2
	Maximum Stress	psi	29.1



Failure Picture



Remarks

Fig. No. 1

Sheet 2

Unconfined Compressive Strength Test

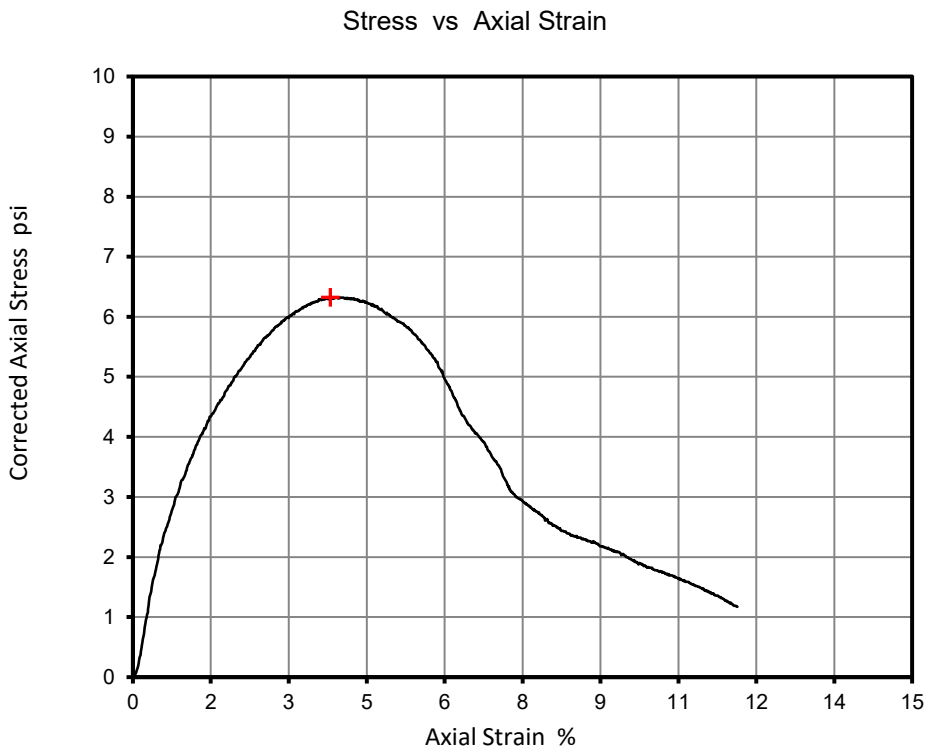
Job Ref	025-03787
Borehole/Pit No.	B-07A

Site Name	DFJ Warehouse and Fueling Station	Sample No.	1
Specimen Description	SILT (ML), with Sand, Brown	Depth	3.00
		Sample Type	ST
		LAB ID	OKCF2026081746
		Date of test	08/18/26

Initial Conditions

			Trimmings
Height	in	4.63	
Diameter	in	2.62	
Bulk Density	pcf	114.9	
Water Content	%	12.8	
Dry Density	pcf	101.8	
Voids Ratio		0.624	
Degree of Saturation	%	54.5	

Rate of Strain applied			1.0
At failure	Axial Strain	%	3.8
	Maximum Stress	psi	6.3



Failure Picture



Remarks

Fig. No. 1

Sheet 3

Unconfined Compressive Strength Test

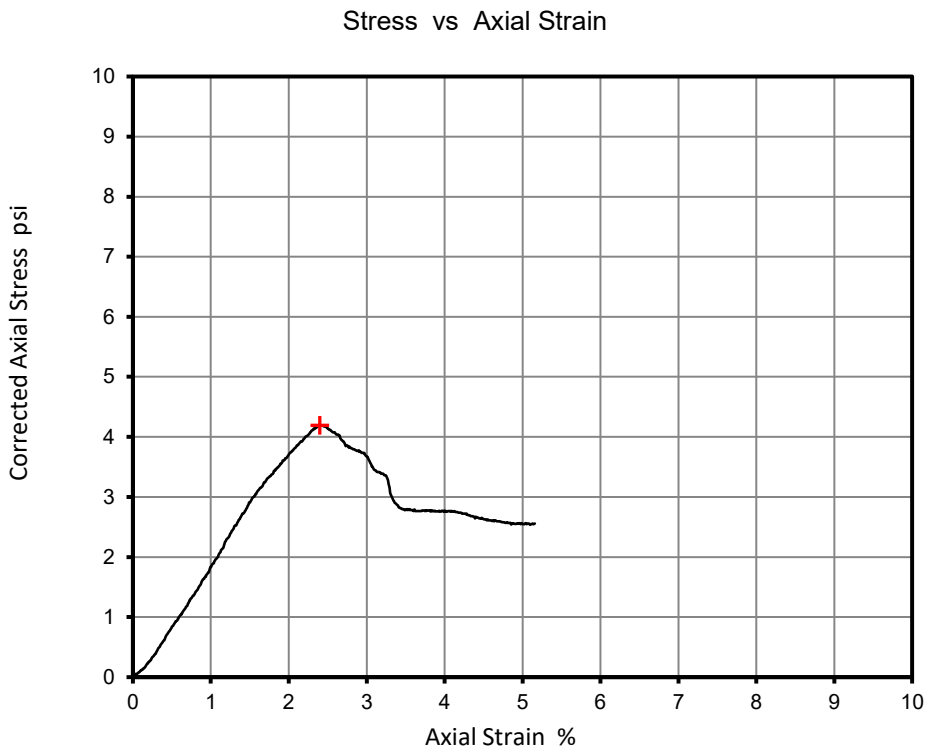
Job Ref	025-03787
Borehole/Pit No.	B-07A

Site Name	DFJ Warehouse and Fueling Station	Sample No.	2
Specimen Description	SANDY SILT (ML), Brown	Depth	8.00
		Sample Type	ST
		LAB ID	OKCF2026081747
		Date of test	08/18/26

Initial Conditions

			Trimmings
Height	in	5.71	
Diameter	in	2.72	
Bulk Density	pcf	112.7	
Water Content	%	11.4	
Dry Density	pcf	101.1	
Voids Ratio		0.636	
Degree of Saturation	%	47.7	

Rate of Strain applied			1.0
At failure	Axial Strain	%	2.4
	Maximum Stress	psi	4.2



Failure Picture



Remarks

Fig. No. 1

Sheet 4

ASTM D4546
One-Dimensional Swell or Collapse of Soils

Project Information	
Project Name:	DFJ Warehouse and Fueling Station
Project Number:	025-03787
Client Name:	CDI Contractors, LLC

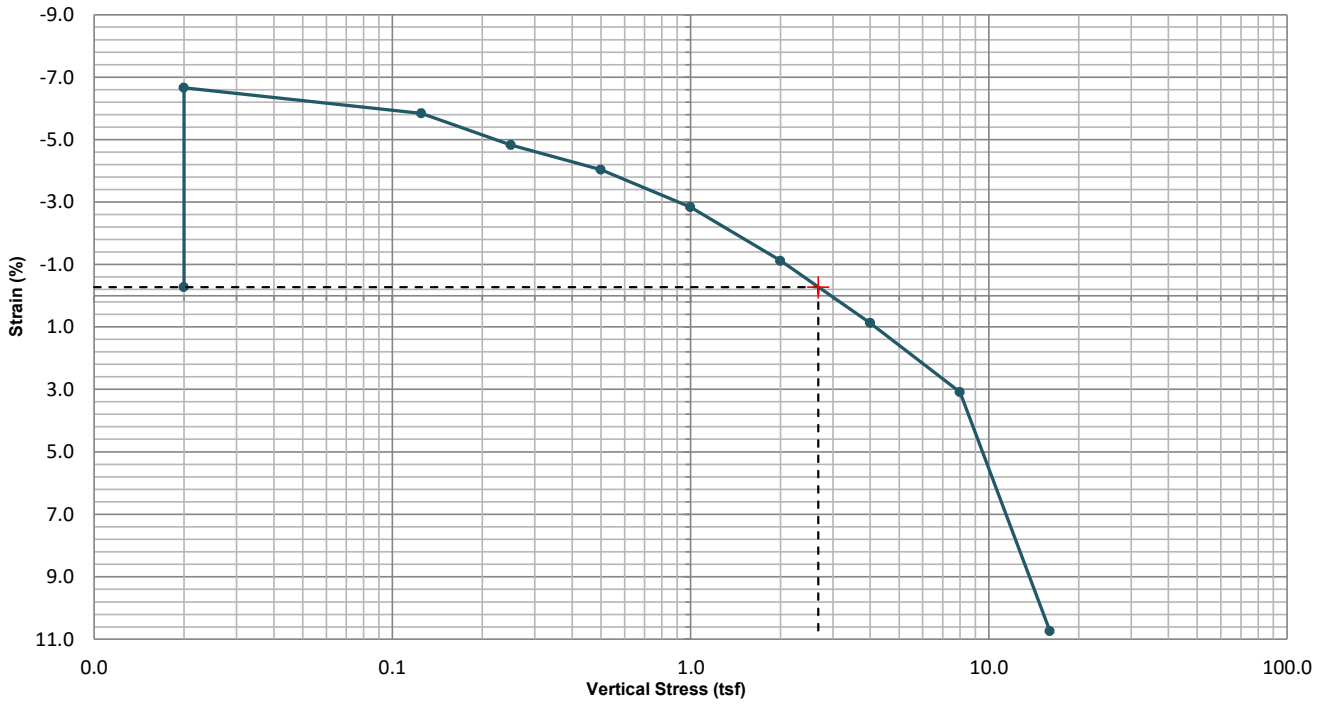
Sample Information	
Boring No.:	B-05
Sample No.:	ST-2
Depth (ft):	3.00
Date Tested:	August 18, 2026
Sample Description:	FAT CLAY (CH), Brown

Test Information	
Test Method:	C
Preparation Method:	Intact
Water Type:	Potable
Inundation Pressure (tsf):	0.02

Atterberg Results			
Liquid Limit:	67	**Plastic Limit:**	20
Plasticity Index:	47		

Test Results		
	Before	**After**
Specimen Mass (g)	158.9	156.1
Water Content (%):	23.7	22.0
Dry Unit Weight (pcf):	99.7	111.5
Saturation (%):	95.4	100.0
Void Ratio:	0.659	0.482
Initial Height, h (in.):	1.000	
Height After Swell, h1 (in.):	1.064	
Magnitude of Swell (%):	6.4	
Swell Pressure (tsf):	2.7	
Final Height, h2 (in):	0.890	

Remarks

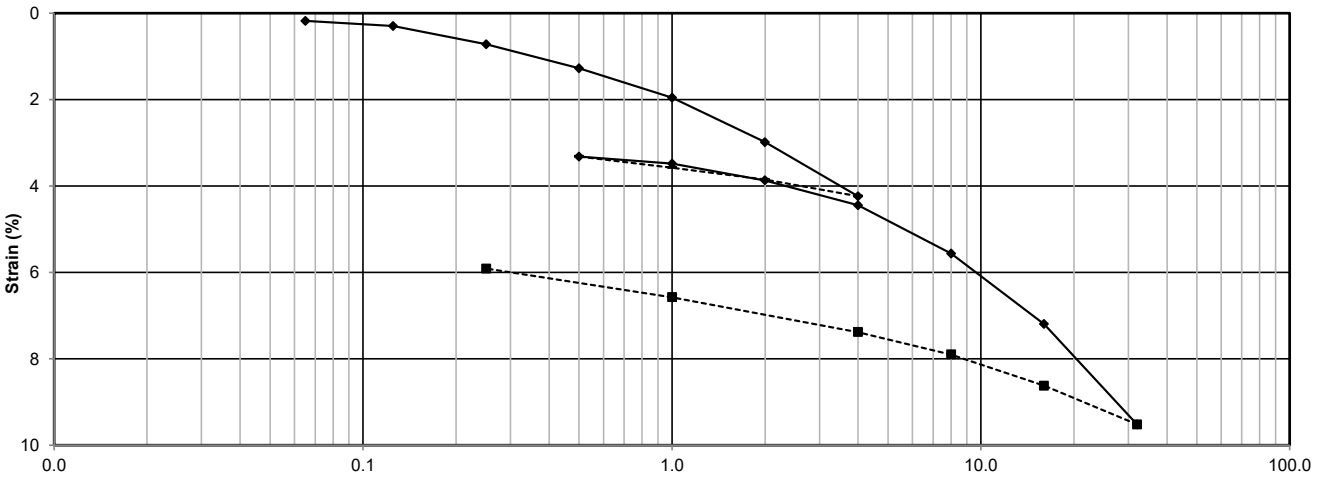


ASTM D2435
One-Dimensional Consolidation Test

Project Information	
Project Name:	DFJ Warehouse and Fueling Station
Project No.:	025-03787
Client Name:	CDI Contractors, LLC

Sample Information			
Boring No.:	B-02A	**Sample Type:**	ST
Sample No.:	1	**Sample ID:**	OKCF2026081715
Depth (ft):	6.00	**Specimen Depth (ft):**	6.00
Sample Description:	Brown Silty CLAY		

Test Information		Soil Information		
Test Method:	ASTM D2435	**Specific Gravity:**	2.65	(Assumed)
Preparation Method:	Ring Sampler	**P-200 (%):**	90.9	
Test Date:	8/18/2026	**Liquid Limit:**	29	
Remarks:		**Plastic Limit**	22	
		Classification:	CL-ML	



Test Data

Stress (tsf)	Void Ratio	Strain (%)	Cv (t50, log) (ft2/s)	Cv (t90, root) (ft2/s)
0.065	0.671	0.2	--	--
0.125	0.670	0.3	--	--
0.250	0.662	0.7	--	4.30E-05
0.500	0.653	1.3	--	1.03E-04
1.000	0.642	2.0	--	6.69E-04
2.000	0.624	3.0	--	1.16E-04
4.000	0.603	4.2	7.09E-04	5.28E-04
2.000	0.610	3.9	--	3.66E-02
1.000	0.614	3.6	--	--
0.500	0.619	3.3	--	1.83E-03
1.000	0.616	3.5	--	2.30E-04
2.000	0.610	3.9	--	1.70E-04
4.000	0.600	4.4	--	2.33E-03
8.000	0.581	5.6	--	2.58E-03
16.000	0.554	7.2	--	3.79E-04
32.000	0.515	9.5	--	2.74E-04
16.000	0.530	8.6	--	--
8.000	0.542	7.9	--	1.52E-02
4.000	0.551	7.4	--	1.39E-02
1.000	0.564	6.6	--	2.97E-05
0.250	0.575	5.9	--	--

Test Results

	Initial	Final
Diameter (in.):	1.97	-
Height (in.):	0.746	0.744
Moisture Content (%):	18.43	20.03
Bulk Density (pcf):	118.5	120.2
Dry Density (pcf):	100.0	100.1
Void Ratio:	0.653	0.651
Saturation (%):	74.8	81.5
Avg. Temp. (°C):	--	
Settlement on Sat. (%):	--	
Est. Preconsolidation Stress (tsf):	2.10	

ASTM D2435
One-Dimensional Consolidation Test

Project Information	
Project Name:	DFJ Warehouse and Fueling Station
Project No.:	025-03787
Client Name:	CDI Contractors, LLC

Sample Information			
Boring No.:	B-03	**Sample Type:**	ST
Sample No.:	3	**Sample ID:**	OKCF2026081723
Depth (ft):	6.00	**Specimen Depth (ft):**	6.00
Sample Description:	Brown Fat CLAY		

Test Information		Soil Information		
Test Method:	ASTM D2435	**Specific Gravity:**	2.65	(Assumed)
Preparation Method:	Ring Sampler	**P-200 (%):**	99.3	
Test Date:	8/18/2026	**Liquid Limit:**	53	
Remarks:		**Plastic Limit**	17	
		Classification:	CH	



Test Data

Stress (tsf)	Void Ratio	Strain (%)	Cv (t50, log) (ft2/s)	Cv (t90, root) (ft2/s)
0.10	0.654	0.3	--	--
0.13	0.654	0.4	--	--
0.25	0.650	0.6	--	3.94E-04
0.50	0.635	1.5	--	6.50E-04
1.00	0.616	2.7	3.12E-04	3.18E-04
2.00	0.592	4.1	3.62E-04	2.96E-04
4.00	0.562	5.9	--	1.37E-04
2.00	0.569	5.5	--	5.32E-04
1.00	0.577	5.0	2.86E-04	2.35E-04
2.00	0.572	5.3	--	4.41E-04
4.00	0.558	6.1	--	5.58E-05
8.00	0.527	8.0	--	2.22E-04
16.00	0.478	10.9	--	6.48E-05
4.00	0.502	9.5	--	3.48E-04
1.00	0.523	8.3	--	2.22E-04
0.25	0.541	7.2	--	6.50E-05
0.05	0.577	5.0	--	--
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--
--	--	--	--	--

Test Results

	Initial	Final
Diameter (in.):	2.50	-
Height (in.):	1.000	0.928
Moisture Content (%):	21.47	21.47
Bulk Density (pcf):	123.3	129.8
Dry Density (pcf):	101.5	106.8
Void Ratio:	0.629	0.547
Saturation (%):	90.5	100.0
Avg. Temp. (°C):	--	
Settlement on Sat. (%):	--	
Est. Preconsolidation Stress (tsf):	1.60	

ASTM D698
Laboratory Compaction Characteristics of Soil Using Standard Effort

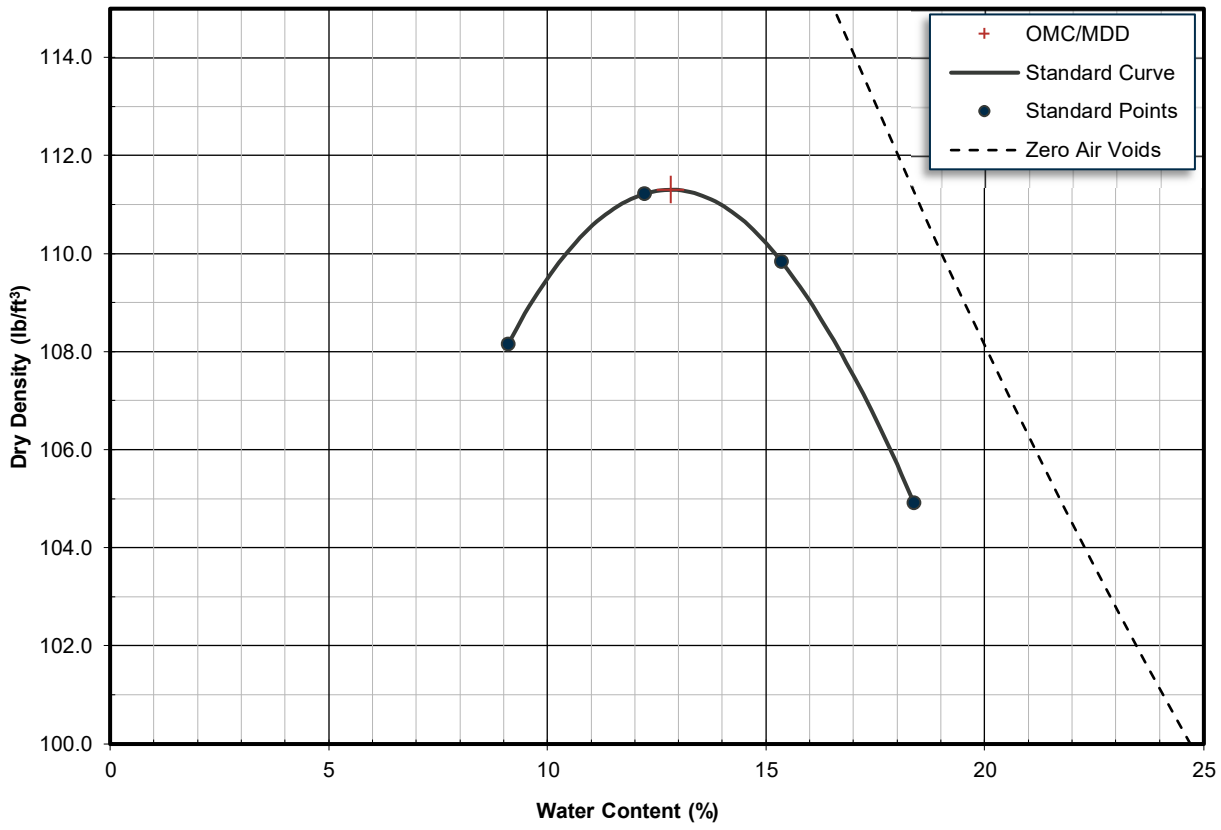
Project Information	
Project Name:	DFJ Warehouse and Fueling Station
Project Number:	025-03787
Client Name:	CDI Contractors, LLC

Sample Information	
Borehole No.:	B-04 BULK
Sample No.:	1
Sample Type:	AU
Sample ID:	OKCF2026081728
Depth (ft):	1.00
Specimen Depth (ft):	1.00
Sample Description:	SILT (ML), with Sand, Brown

Test Method	
Test Procedure:	ASTM D698
Test Method:	B
Preparation Method:	Dry Method
Rammer Type:	Mechanical - circular face
Specific Gravity (Gs):	2.65
Gs Method:	Assumed
As Received WC (%):	NP

Remarks

Test Results		
Max. Dry Density:	111.3	lb/ft3
Opt. Moisture Content:	12.8	%
Liquid Limit:		NP
Plastic Limit:		NP
Plasticity Index:		NP
Classification:		ML
Retained on 3/4" (%):		--
Retained on 3/8" (%):		--
Retained on No. 4 (%):		--



ASTM D698
Laboratory Compaction Characteristics of Soil Using Standard Effort

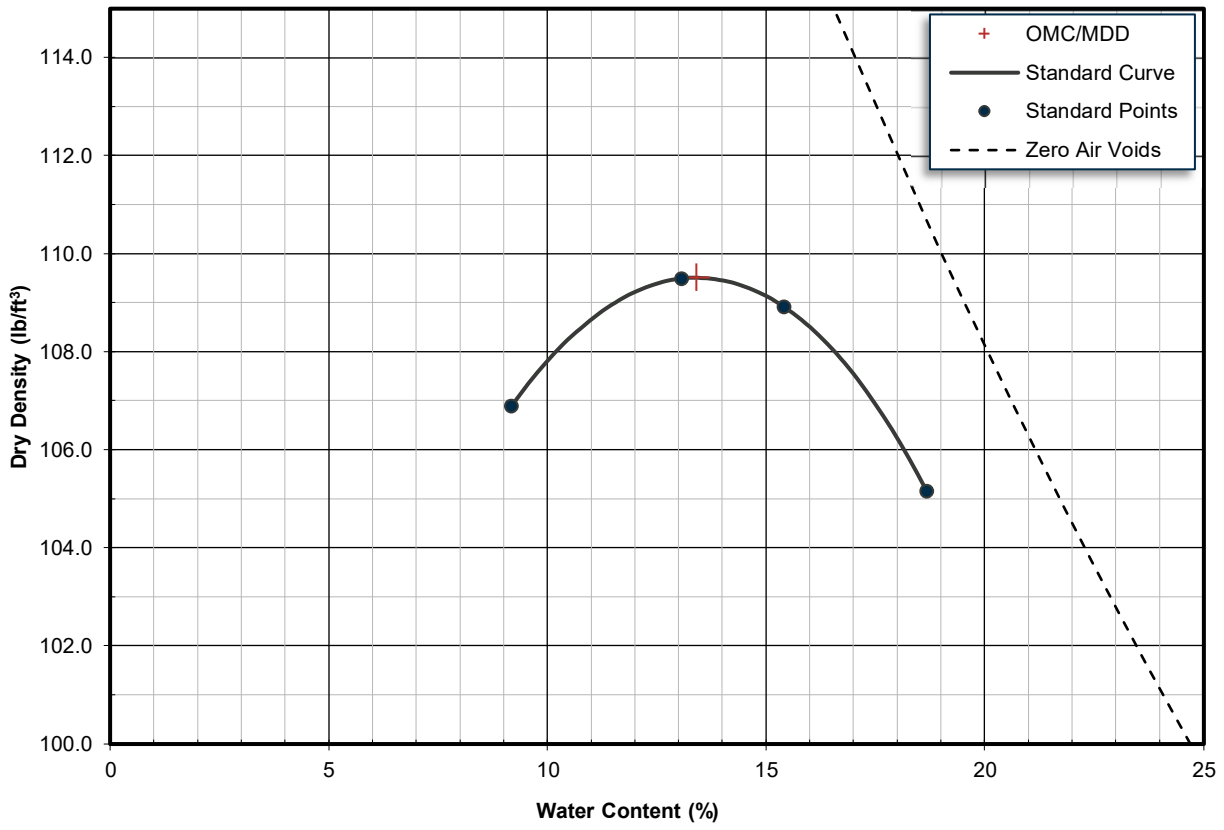
Project Information	
Project Name:	DFJ Warehouse and Fueling Station
Project Number:	025-03787
Client Name:	CDI Contractors, LLC

Sample Information	
Borehole No.:	B-05 BULK
Sample No.:	1
Sample Type:	AU
Sample ID:	OKCF2026081733
Depth (ft):	1.00
Specimen Depth (ft):	1.00
Sample Description:	SILT (ML), with Sand, Brown

Test Method	
Test Procedure:	ASTM D698
Test Method:	B
Preparation Method:	Dry Method
Rammer Type:	Mechanical - circular face
Specific Gravity (Gs):	2.65
Gs Method:	Assumed
As Received WC (%):	NP

Remarks

Test Results		
Max. Dry Density:	109.5	lb/ft3
Opt. Moisture Content:	13.4	%
Liquid Limit:		NP
Plastic Limit:		NP
Plasticity Index:		NP
Classification:		ML
Retained on 3/4" (%):		--
Retained on 3/8" (%):		--
Retained on No. 4 (%):		--



ASTM D698
Laboratory Compaction Characteristics of Soil Using Standard Effort

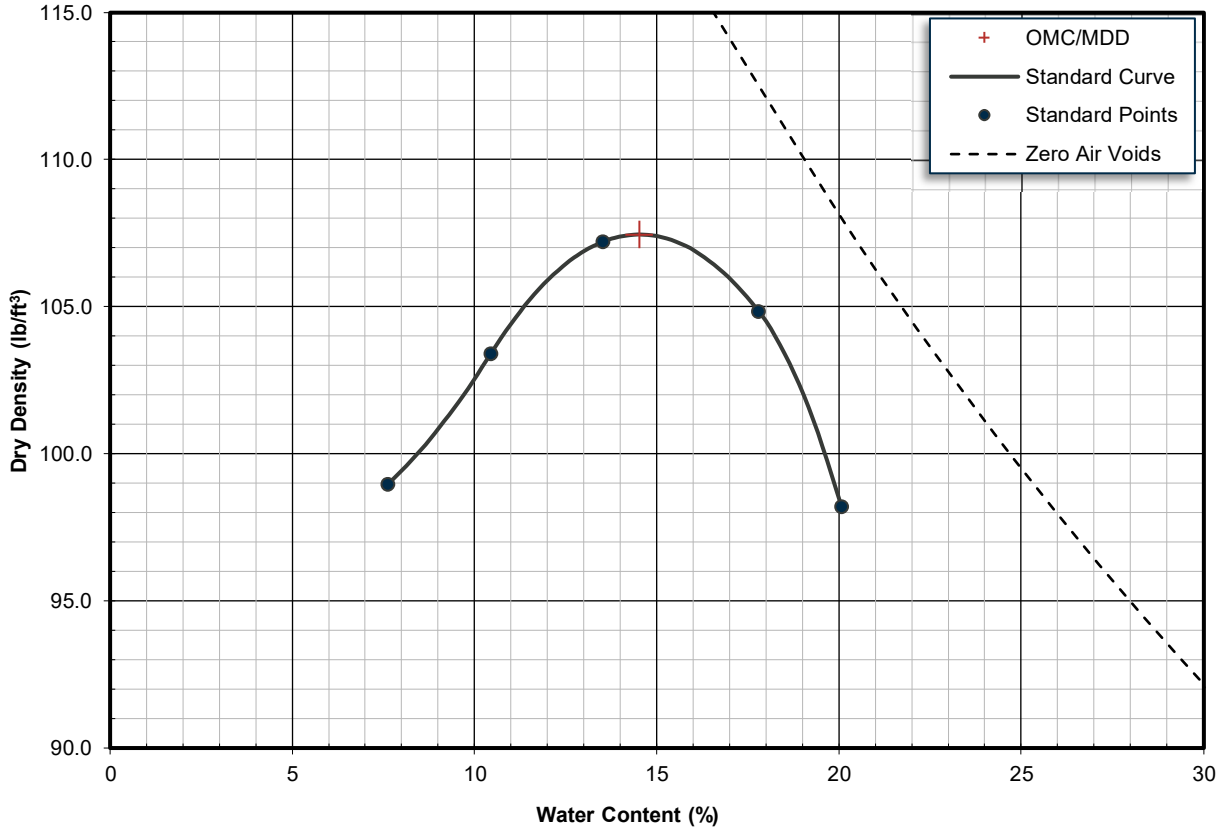
Project Information	
Project Name:	DFJ Warehouse and Fueling Station
Project Number:	025-03787
Client Name:	CDI Contractors, LLC

Sample Information	
Borehole No.:	B-08 BULK
Sample No.:	1
Sample Type:	AU
Sample ID:	OKCF2026081752
Depth (ft):	1.00
Specimen Depth (ft):	1.00
Sample Description:	SILT (ML), Light Brown

Test Method	
Test Procedure:	ASTM D698
Test Method:	B
Preparation Method:	Dry Method
Rammer Type:	Mechanical - circular face
Specific Gravity (Gs):	2.65
Gs Method:	Assumed
As Received WC (%):	NP

Remarks

Test Results		
Max. Dry Density:	107.5	lb/ft3
Opt. Moisture Content:	14.5	%
Liquid Limit:		NP
Plastic Limit:		NP
Plasticity Index:		NP
Classification:		ML
Retained on 3/4" (%):		--
Retained on 3/8" (%):		--
Retained on No. 4 (%):		--



olsson	**California Bearing Ratio (CBR) of Laboratory-Compacted Soils**				Project No.	025-03787
					Borehole/Pit No.	B-04 BULK
Site Name	DFJ Warehouse and Fueling Station				Sample No.	1
Specimen Reference	B-04 BULK_AU1	Specimen Depth	1.00	ft	Depth ft	1.00
Specimen Description	SILT (ML), with Sand, Brown				Sample Type	AU
Test Method	ASTM D1883				Lab ID	OKCF2026081728
					CBR Test Number	1

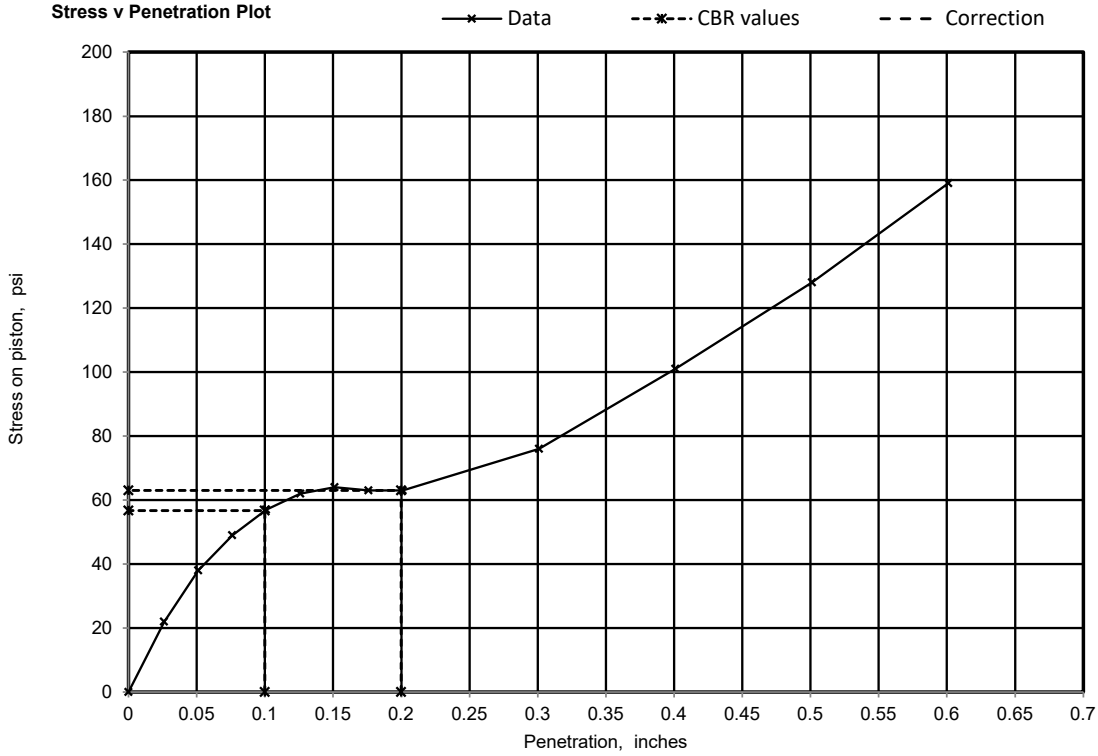
Specimen Preparation

Condition: Remolded

Details: Recompacted to specified density using rammer

Material retained on ¾ in. (19mm) sieve			0	%			
Compacted specimen details	Bulk density		1.91	g/cm3			
	Dry density		1.68	g/cm3	Soaking details	Soaked	
	Dry unit weight		105.1	pcf	Period of soaking	96	hours
	Water content		13.2	%	Amount of swell recorded	0.01	in.
Surcharge applied	10.00	lbf ~	0.40	psi	Water content in top 1in. (25.4mm)	16.6	%

Stress v Penetration Plot



Results

Curve correction applied in.	CBR Values, %	
	0.1 in.	0.2 in.
--	5.7	4.2

General remarks	Test specific remarks	Approved

Fig No.	1
Sheet No	1

Lab Sheet Reference :

olsson	**California Bearing Ratio (CBR) of Laboratory-Compacted Soils**				Project No.	025-03787
					Borehole/Pit No.	B-05 BULK
Site Name	DFJ Warehouse and Fueling Station				Sample No.	1
Specimen Reference	B-05 BULK_AU1	Specimen Depth	0.00	ft	Depth ft	1.00
Specimen Description	SILT (ML), with Sand, Brown				Sample Type	AU
Test Method	ASTM D1883				Lab ID	OKCF2026081733
					CBR Test Number	1

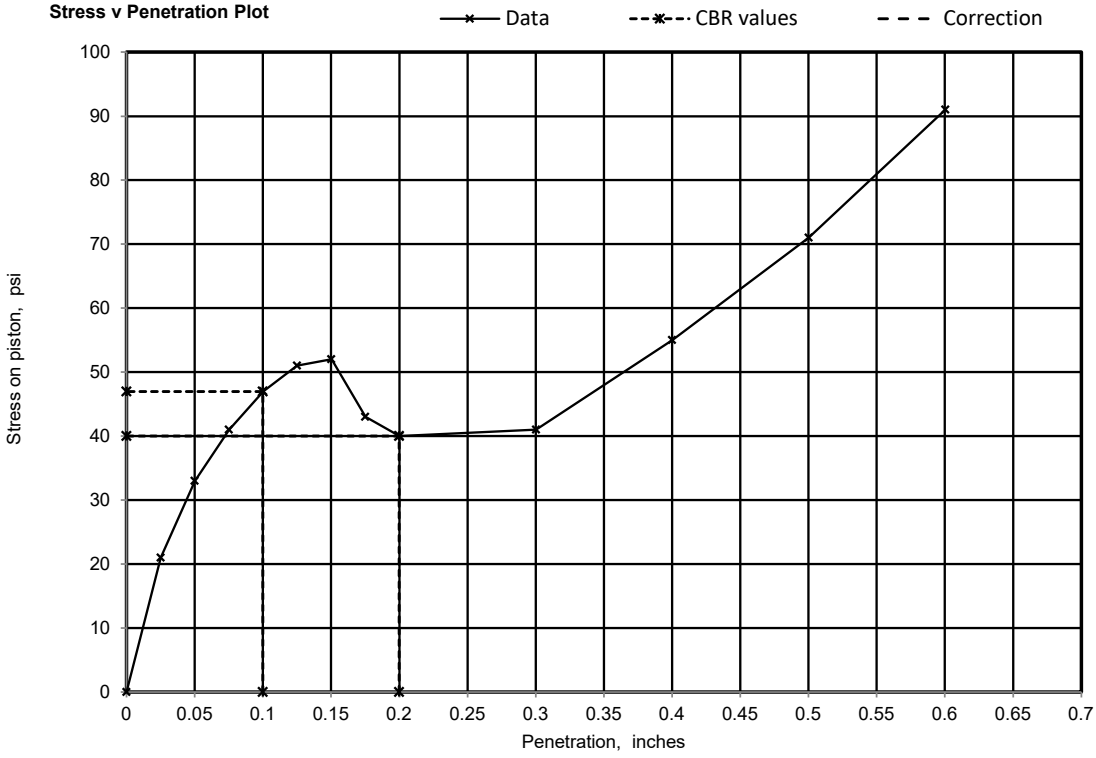
Specimen Preparation

Condition: Remolded

Details: Recompacted to specified density using rammer

Material retained on ¾ in. (19mm) sieve			0	%			
Compacted specimen details	Bulk density		1.88	g/cm3			
	Dry density		1.66	g/cm3	Soaking details	Soaked	
	Dry unit weight		103.4	pcf	Period of soaking	96	hours
	Water content		13.7	%	Amount of swell recorded	0.02	in.
Surcharge applied	10.00	lbf ~	0.40	psi	Water content in top 1in. (25.4mm)	17.1	%

Stress v Penetration Plot



Results

Curve correction applied in.	CBR Values, %	
	0.1 in.	0.2 in.
--	4.7	2.7

General remarks	Test specific remarks	Approved

Fig No.	1
Sheet No	2

Lab Sheet Reference :

olsson	**California Bearing Ratio (CBR) of Laboratory-Compacted Soils**				Project No.	025-03787
					Borehole/Pit No.	B-08 BULK
Site Name	DFJ Warehouse and Fueling Station				Sample No.	1
Specimen Reference	B-08 BULK_AU1	Specimen Depth	1.00	ft	Depth ft	1.00
Specimen Description	SILT (ML), with Sand, Brown				Sample Type	AU
Test Method	ASTM D1883				Lab ID	OKCF2026081752
					CBR Test Number	1

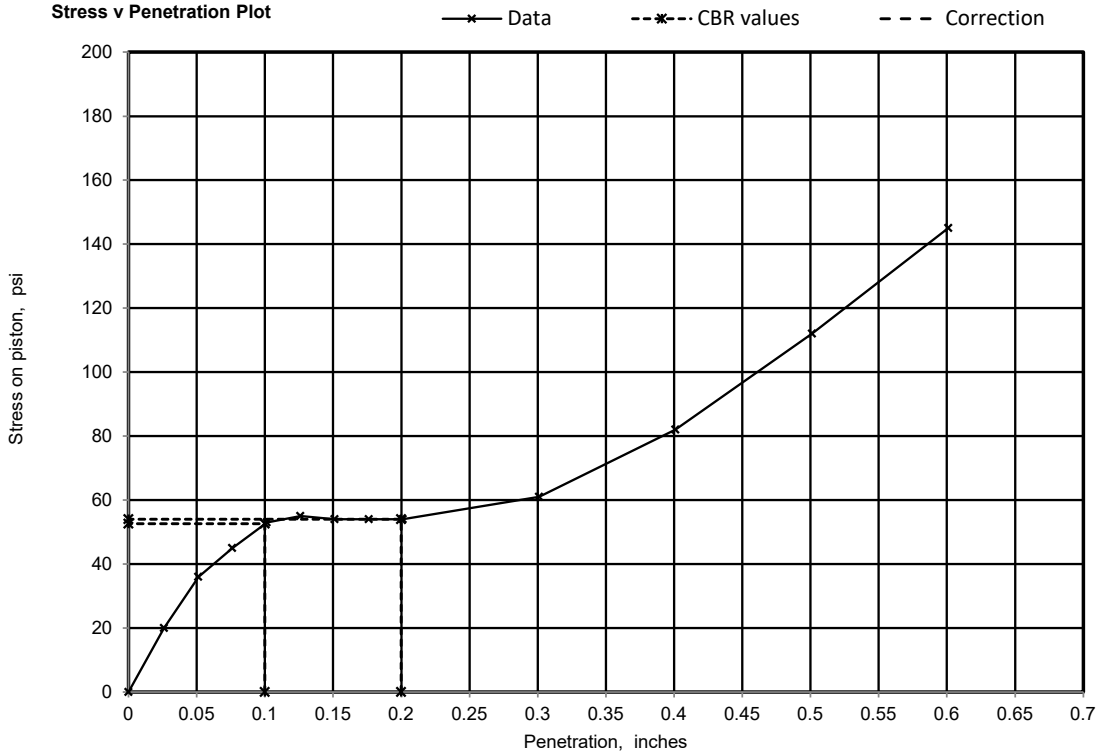
Specimen Preparation

Condition: Remolded

Details: Recompacted to specified density using rammer

Material retained on ¾ in. (19mm) sieve			0	%			
Compacted specimen details	Bulk density		1.87	g/cm3			
	Dry density		1.62	g/cm3	Soaking details	Soaked	
	Dry unit weight		101.4	pcf	Period of soaking	96	hours
	Water content		14.9	%	Amount of swell recorded	0.02	in.
Surcharge applied	10.00	lbf ~	0.40	psi	Water content in top 1in. (25.4mm)	17.9	%

Stress v Penetration Plot



Results

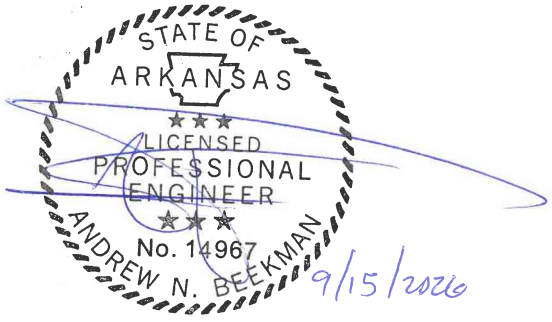
Curve correction applied in.	CBR Values, %	
	0.1 in.	0.2 in.
--	5.3	3.6

General remarks	Test specific remarks	Approved

Fig No.	1
Sheet No	3

Lab Sheet Reference :

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DFJ WAREHOUSE AND FUELING STATION

Little Rock, Arkansas

September 2026

Olsson Project No. 025-03787

PART 1 - GENERAL

1.01 INFORMATION FOR BIDDERS

A. The following documents provided by the Little Rock Municipal Airport Commission are included following this Section and are to be reviewed by Bidders as they relate to preparing their bid for this project:
   1. Little Rock Municipal Airport Commission Information for Potential Bidders/Contractors Regarding the Security and Operations Requirements for Construction Projects at Bill and Hillary Clinton National Airport (LIT) Little Rock.
   2. LIT AIRSIDE OPERATIONS MOVEMENT/NON-MOVEMENT GUIDE

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF DOCUMENT

Little Rock Municipal Airport Commission

Information for Potential Bidders/Contractors
Regarding the Security and Operations Requirements for Construction Projects
at
Bill and Hillary Clinton National Airport (LIT)
Little Rock



Introduction

Construction on an airport has regulatory requirements not experienced in the non-airport construction world. The airport is obligated to follow Department of Transportation, Federal Aviation Administration, Department of Homeland Security (TSA and CPB) and other federal codified regulations. In addition, the airport is required to comply with TSA Security Administration Security Directives and FAA Advisory Circulars. This guide will outline airport-specific requirements to assist in bidding airport construction projects.

Airside Construction

1. **Airside Construction Activities.** Airside Construction is any construction occurring within the perimeter fence of the airport. The area within the Airport's perimeter security fence is also call the Airport Operations Area (AOA). Access to the AOA is restricted to those individuals granted an Airport ID badge, or to those who are properly escorted by those individuals granted an Airport ID badge with escort privileges. Examples of airside construction include Runway, Taxiway, Ramp and NAVAIDs construction.
    a. **Security requirements**. All airside construction activities must access the airfield through an Airport Security approved access point. Openings in the Airport's perimeter security which allow access to the AOA are typically referred to as "AOA doors" or "AOA gates" and are numbered with signage for reference and wayfinding. The standard access procedures for usage of AOA doors and AOA gates to gain access to the AOA are included in the training provided by the Airport and required to obtain an Airport identification (ID) badge. Access gates, haul routes, temporary fencing and non-standard access procedures require a TSA approved Change of Conditions. The request for a Change of Conditions require a 30-day advance submission to the Airport Security Coordinator. The Airport Security Coordinator will route the change through TSA to comply with federal security requirements. TSA's requirement is 30-day advance submission. Once a company is the successful bidder, it is the contractor's responsibility to schedule an appointment, with the Airport Security Coordinator, to identify and initiate "Changes of Conditions" that will occur during the entire project to prevent any construction interruptions. Any violations of federal security regulations or directives are punishable by TSA through civil fines to airports, individuals and/or companies.
    b. **FAA Advisory Circulars**. All Airside construction is required to comply with the current FAA Advisory Circulars. Despite the name, Advisory Circulars are regulatory in nature for commercial service airports certified under 14 CFR Part 139.
    c. Work requiring Notices to Airmen (NOTAMs) must be submitted to Airport Operations no less than 72 hours prior to work requiring the NOTAM(s).

2. **Landside Construction Activities.** Landside Construction is any construction outside the airport perimeter fence, and includes pre-security checkpoint and parking areas. An airport issued ID badge is not required for these construction activities.

3. **Badging requirements.** All construction activities on the Airside (inside the perimeter fence or within the AOA), within the Secured (terminal aircraft ramp) or Sterile (Concourse) areas of the airport require display of airport badge media or escort by an

escort-approved airport badge holder. The designated escort badge-holder must have a clearance for the areas in which they are escorting.

a. Work authorization: All persons performing work on the airport must be U.S. citizens or authorized to work in the United States.
b. Prime contractors are required to have at least one Signatory Authority for badge applications. This person must have an airport badge and successfully complete the annually required Signatory Training. The prime contractor Signatory Authority can sign for sub-contractor badge applications. If the contract is a large job, the sub-contractor may be required to provide their own Signatory Authority. The Signatory Authority is responsible for maintaining control, inventory and audit of badges assigned to their personnel. A company is allowed up to three Signatory Authorities (Primary and two alternates). Any information on Badge applicants can only be discussed with the Signatory Authorities. The Signatory Authority is also responsible for immediately notifying the Badging Office or Airport Operations when a badge is lost, stolen, or employee is terminated. Annual/Random audits are required of the airport by TSA to ensure positive control of airport access media.
c. All persons applying for an airport badge are required to submit fingerprints for a Security Threat Assessment (STA) and Criminal History Records Check (CHRC). Fingerprints expire 30 days from the initial submission of fingerprints. The process has to start all over if a badge is not issued within the first 30 days. It normally takes 2-3 days but can take up to 2 weeks to receive the STA and CHRC results. These results are required prior to a person attending required badge training. Persons with certain law violations, within the last 10 years, may be disqualified for an airport badge. A list of the disqualifying law violations are available from the airport Badging Office. Any person denied a badge cannot be escorted.
d. The airport participates in the FBI RAPBACK program. If a badged person experiences a law violation after receiving a badge, the FBI sends notification of the charge to the airport. Judicial outcome can result in permanent revocation of badge per federal security requirements. Revoked badge holders cannot be escorted.
e. There are costs to the contractor/sub-contractor associated with obtaining badges and changing/replacing the initial badge. These costs and estimated training times are outlined in the table of charges.
f. When submitted for an airport badge, the Signatory Authority is required to determine the level of access/authority required for the badge applicant. This includes drivers for both Movement/Non-movement areas, escort privileges and must define the area required to ensure the proper color of badge issued. All applicants are required to bring two forms of valid identification. The documents list and badging requirements are available in the Airport Badging Office.

g. Escort privileges are established according to construction activity, type of escorting (confined work area versus vehicle escorting) and the ratio one escort can positively control for the type of escorting performed. This requirement is discussed in the pre-bid meeting.
h. Badge applicants are required to complete computer-based training. Successful completion is a 100 percent on the final test(s).
i. Driving privileges require extra training. This training includes computer-based training, a tower tour (Movement Area Driver) and a check-ride by an Airport Operations Duty Manager (Movement Area Driver). The movement training process can take up to 2-3 weeks and should be completed as part of the initial badge process when possible.

4. <u>Security/Work Area Requirements</u>.

a. Change of Conditions submitted through the Airport Security Coordinator are required anytime an altered access, haul route, SIDA boundary or perimeter fencing is necessary for the project. The Airport Security Coordinator must submit to TSA 30-days prior to execution. Altered conditions cannot proceed until the Airport Security Coordinator receives TSA approval.
b. A Work Area Notification (WAN) form or Information Technology/Security Modification (ITSM) form must be submitted at least 72 hours prior to the proposed start of work. Templates for these forms are provided by the Airport.
c. Submittal of a Work Area Notification (WAN) is provided by the Contractor for the Airport's internal distribution and notification to parties affected by proposed construction activities.
d. An ITSM is required for any work that impacts access control equipment, alarms, CCTV cameras, IDF/MDF rooms or other security/IT related areas or equipment. An ITSM requires the approval of specific Airport personnel prior to the start of the proposed work.
e. Security violations committed by contractor employees can result in federal civil penalties to the airport, contractor and/or individual. The contractor will be billed for any civil penalties received by the airport, due to failure of contractor's employee(s) to follow security procedures. Any security violations committed by contractor employees may result in a Badge suspension of up to 5 days.

TABLE OF CHARGES

BADGING	Time Required	Cost per unit	NOTES
Fingerprint for Badging	15 minutes	$40.00	Required
Security Threat Assessment (STA)		$10.00	Processed with fingerprints
Badge (New)	10 minutes	$10.00	Proper documents required
Badge (Renewal)	15 minutes	$20.00	STA plus badge cost
Badge (Upgrade, i.e. movement, escort, etc.)	10 minutes	$10.00	Paid by company
Badge (Lost), First replacement	10 minutes	$25.00	Usually paid by individual
Badge (Lost), Second replacement	10 minutes	$50.00	Usually paid by individual
Badge (Lost), Third replacement	10 minutes	$100.00	Usually paid by individual
Cyberkey	15 minutes	$200.00	Returned upon operable key turn-in. **Controlled item.** Key must remain with person issued to.
Badge Audit	30 minutes	N/A	Annual TSA requirement/Possible Random audit
Unreturned Badges (i.e. Employee termination)	N/A	$100.00	
TRAINING			
Signatory Computer-Based Training (Project manager or designated company representative)	45 minutes	N/A	Required to sign badge applications.
Secured Identification Area (SIDA) Training	1 hour	N/A	Required for all badges
Non-Movement Training	1 hour	N/A	Required for AOA drivers
Movement Training	1.5 hours	N/A	Non-Movement training required prior to Movement Training
Taxiway/Runway Identification test	15 minutes	N/A	Map test
Tower Tour	1 hour	N/A	Required for Movement Area Driver privileges
Movement certification with Ops Duty Manager	1 hour	N/A	Practical test
Escort Training	30 minutes	N/A	Required for personnel that have an official need to escort un-badged persons
VEHICLE PERMITS/PARKING			
AOA permit for properly labeled construction vehicles (no personal vehicles)	10 minutes	N/A	Certificate of Liability Insurance
Construction Personal Vehicle (Blue Hang Tag)	10 minutes	N/A	Vehicle/Personnel Identification forms are required for designated construction/cargo area parking for construction employees. Use allowed only during scheduled work hours.

Temporary construction AVI Tag (Landside construction)	10 minutes	$100.00	Deposit returned at turn-in
Unauthorized vehicle parking boot		$25.00	Paid by offender
Unauthorized vehicle tow			Paid by offender to tow company

LIT AIRSIDE OPERATIONS MOVEMENT/NON-MOVEMENT GUIDE

Introduction:

This guide applies to the Movement and Non-Movement areas on airport property owned by the Little Rock Municipal Airport Commission. Tenant/contractor organizations are responsible to ensure their employees adhere to procedures in this guide and the official Computer Based Training for Airside Movement and Non-Movement Area vehicle operations. No persons are exempt from the established training requirements for airside vehicle operations. All operators are required to have a valid and current state-issued driver license to operate a vehicle on airport property. Landside vehicle operations rules outlined in the Airport Rules and Regulations are not included in this guide.

Non-Movement Area Vehicle Operator Requirements

Applicants for Non-Movement Driver privileges must satisfactorily complete the computer-based driver's training course before receiving airside Non-Movement Area driving privileges. All applicants must score a 100 percent on the computer-based training. If an applicant fails to achieve a 100 percent score, within two attempts, a third attempt is at the discretion of the Airport Director of Operations. Recurrent training is required every two years.

Movement Area Vehicle Operator Requirements

Initial training for Movement Area Driver privileges consists of successful completion of: 1) airside Non-Movement and Movement computer-based training; 2) Duty manager briefing on ATC communications; 3) correct map labeling of airfield runways/taxiways and; 4) an orientation/check-ride with Airport Operations Duty Manager. Successful completion is achieved with 100 percent score on both the computer based training and the map labeling. If an applicant will be required to operate a vehicle at night, both a daytime and nighttime orientation/check-ride is required.

Recurrent training and compliance check-ride is FAA-mandated to occur within 12 consecutive calendar months from award of Movement Area driving privileges. This recertification training requires successful completion of the Computer-Based Training, correct map labeling of airfield runways/taxiways and presentation of a current state-issued driver license.

Taxi-qualified Mechanics

Taxi-qualified mechanics must meet the same badging and training requirements as Movement Area Drivers.

Airside Driver Regulations

1. No person may be the primary operator of a vehicle on the airside (Movement or Non-Movement) unless they are authorized to operate the class of vehicle by a state-licensing agency and certified through their employer training/certification program (i.e. tugs, ground handling equipment, taxi-qualified mechanics, etc.)
2. The following speed limits must be followed: 1) 25-mph on perimeter roads, 15-mph on ramp areas/vehicle service roads and 5-mph around parked aircraft. Excessive speeds are punishable with a driving violation.
3. Moving or tugged aircraft always have the right-of-way.
4. Passengers enplaning or deplaning aircraft on ramp areas have right-of-way over all vehicles.
5. No vehicle shall depart the vehicle surface road and pass between an aircraft and the terminal building.
6. No vehicle shall pass closer than 25 feet from any wing or tail section of a parked aircraft unless involved in servicing the aircraft.
7. No passing other ground vehicles utilizing the vehicle service road.
8. No vehicle may enter the airside without a current AOA sticker and driven by a properly movement/non-movement certified driver unless a vehicle is being escorted by a properly badged/certified airside driver and the vehicle being escorted is properly placarded in accordance with current security regulations.
9. No vehicle may enter the Movement area without proper clearance from the Air Traffic Control Tower. In addition, the vehicle must have an operable 2-way air-band radio for ATC communications. If escorted, the vehicle must be escorted by a properly certificated and equipped vehicle with properly certified movement/non-movement driver.
10. No fuel truck may be parked with 10 feet if other vehicles or 50 feet of any building.
11. Tugs and cargo K-loaders shall not tow/carry more carts, items or containers than the designed vehicle capacity.
12. No person shall park a vehicle in an aircraft parking area, safety area, or grass area or in a manner that obstructs or interferes with operations in the movement or apron areas.
13. No person shall operation a vehicle or other equipment on airport property while under the influence of alcohol or any drug that may impair the operator's abilities.
14. All vehicles shall utilize the airport perimeter and vehicle service roads, whenever possible, to transition between areas on the airport.
15. Vehicle operators are responsible for the activities of passengers in their vehicle while operating on the airside of the airport.

Vehicle Regulations

1. Vehicles must be properly registered in accordance with State Law unless a qualified off-road vehicle not permitted to operate on public streets/highways.
2. All vehicles operated airside must have vehicle liability insurance, as required by the Little Rock Municipal Airport Commission.
3. All vehicles must be lighted and marked per FAA Advisory Circular 150/5210-5.
4. Service vehicles and fuel trucks must be equipped with appropriately rated fire extinguishers (service vehicles and fuel trucks).

5. All vehicles must use designated vehicle service roads when operating on the ramp.

Vehicle Accidents/Incidents

1. Immediately stop and remain at the scene.
2. Call 911 if medical assistance is required followed by an immediate call to Airport Communications Center, 501-537-7341 to report accident/injuries/location.
3. Provide requested information to LRPD officers and Airport Operations, 501-837-6641 to complete the accident report.

Movement/Non-Movement Violations

1. Any infractions incurred while operating a vehicle on the airside will result in the actions listed below.
2. Any vehicle operator involved in a runway or taxiway incursion will experience immediate suspension of driving privileges and must complete remedial airfield driver's training.

DRIVER VIOLATIONS	
1st Offense	Administrative Warning
2nd Offense	3-day Movement or Non-movement suspension and remedial training
3rd Offense	5-day Movement or Non-movement suspension and remedial training
4th Offense	Possible revocation determined by Manager, Operations and Security or Airport Director of Operations

CONTRACTOR AND MAINTENANCE OPERATIONS IN RUNWAY/TAXIWAY SAFETY AREAS

Construction contractors, FAA Tech Ops and Airfield Maintenance personnel routinely operate within the in-fields between runways and taxiways. There are two invisible boundaries to be aware of when performing operations in these areas: 1) Runway Safety Area and 2) Taxiway Safety Area. Access to either of these areas require two-way communication with the Air Traffic Control Tower to gain clearance to enter these areas. In addition, two-way communication should also occur to advise tower when clear of these areas. Unauthorized access to these areas is an incursion and requires an investigation by the airport and the FAA.

The Runway Safety Area (RSA) is the most critical of the two areas mentioned in this section. The RSA extends 250-feet each way (500 feet wide) from the centerline of the runway and extends 1,000 from each end of the runway. There is an overlapping of the Runway 18/36 and Runway 4L/22R RSAs.

When transiting from one in-field to another, clearance must be obtained from the tower through two-way communication, prior to operating on or crossing a runway or taxiway. A clearance is also required when accessing closed runways and taxiways from ramp or non-movement areas.

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HANGAR 12 SERVICE CENTER WAREHOUSE ADDITION
DASSAULT FALCON JET
LITTLE ROCK, ARKANSAS
PSW Project No. 699H

Proposal of _____
(hereinafter called "Bidder"): (Strike Out Following Inapplicable Items)

1. An _____ Corporation,
   (State)
2. A Partnership, or

3. An Individual doing business as _____

Bidder, in compliance with bid solicitation for Construction of Hangar 12 Service Center Warehouse Addition for Dassault Falcon Jet in Little Rock, Arkansas, having examined plans and specifications with related documents and site of the proposed Work, and being familiar with all conditions surrounding proposed project, including availability of materials and labor, hereby proposes to furnish labor, materials, and supplies, and construct project in accordance with Contract Documents, within time set forth therein, and at prices stated below. Prices are to cover all expenses incurred in performing Work required under Contract Documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on date specified in written "Notice to Proceed" and substantially complete work within _____ consecutive calendar days.

Bidder acknowledges receipt of the following addenda:

No.____ Date:_____ No.____ Date:_____ No.____ Date:_____

No.____ Date:_____ No.____ Date:_____ No.____ Date:_____

BASE BID: Bidder agrees to perform all Work described in the Project Manual and shown on the Drawings for the sum of _____

_____Dollars ($_____).

LIST OF UNIT PRICES

(Refer to Section 01 2200 - Unit Prices for detailed description)

The Bidder shall **include in the Base Bid** the following lump sum allowances computed based upon the quantities listed and unit costs indicated. Unit prices include all Contractor cost including labor, material, General Conditions and overhead and profit. Bidder understands that the Owner reserves the right to review and or negotiate Unit Prices that are deemed to be not in accordance with current market value of proposed services.

In the event the actual quantities are greater or less than the given volumes, the unit prices stated will be used to adjust the contract accordingly.

Lump Sum Allowance 1: For undercut of unsuitable material at building and pavement areas and off-site disposal. This is in addition to the excavation and stripping required to establish grades shown on the drawings which is to be included in the Base Bid.

3100 C.Y. @ $_____per C.Y. = $_____ Lump Sum

Lump Sum Allowance 2: For importing, placing and compacting select fill material at undercut areas only. This is in addition to the fill material required to establish grades shown on the drawings which is to be included in the Base Bid.

3100 C.Y. @ $_____per C.Y. = $_____ Lump Sum

LIST OF SUBCONTRACTORS

I, the undersigned General Contractor, certify that proposals from the following subcontractors were used in the preparation of my proposal. I agree that if I am the successful bidder, and if following subcontractors are approved, I will not enter into contracts with others for these divisions of the Work without written approval from Architect and Owner.

NAME:

MECHANICAL:_____

PLUMBING:_____

ELECTRICAL:_____

FIRE PROTECTION:_____

SITE / CIVIL:_____

Bidder understands that Owner reserves right to reject any or all bids and to waive any formalities in the bidding. Bidder agrees bid shall be good and may not be withdrawn for period of thirty (30) days after scheduled closing time for receiving bids.

Upon receipt of written notice of acceptance of bid, Bidder will execute formal contract within ten (10) days and deliver Surety Bond or Bonds as required by Document 00 7000.

By:_____ Date:_____
(Typed Name)

_____ Contractor License No._____
(Signature)

_____
(Title)

_____
(Business Address)

_____

(Seal - If bid is by a Corporation)

END OF DOCUMENT

PART 1 - GENERAL

1.01 GOVERNING STANDARD DOCUMENT

A. ***Standard Form of Agreement Between Owner and Contractor*** *where the basis of payment is a Stipulated Sum*, Document No. A101 of American Institute of Architects, 2017 Edition is bound and incorporated into these specifications and is to be used as the Contract for this project.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF DOCUMENT

AIA Document A101 – 2017

Standard Form of Agreement Between Owner and Contractor *where the basis of payment is a Stipulated Sum*

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

BETWEEN the Owner:

Dassault Falcon Jet

and the Contractor:

for the following Project:

Hangar 12 Service Center Warehouse Addition

The Architect:

Polk Stanley Wilcox
801 South Spring Street
Little Rock, Arkansas 72201

The Owner and Contractor agree as follows.

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

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

The parties should complete A101™–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 THE WORK OF THIS CONTRACT

3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

4 CONTRACT SUM

5 PAYMENTS

6 DISPUTE RESOLUTION

7 TERMINATION OR SUSPENSION

8 MISCELLANEOUS PROVISIONS

9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

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

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[« »] The date of this Agreement.

[« »] A date set forth in a notice to proceed issued by the Owner.

[« »] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

« »

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

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

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

[«X »] Not later than calendar days from the date of commencement of the Work.

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[« »] By the following date: « »

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

Portion of Work	Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be «xxx » ($ «xxx »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

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

Item	Price

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

Item	Price	Conditions for Acceptance

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

Item	Price

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

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

« »

§ 4.6 Other:
(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

« »

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ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

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

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

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the «25th» day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the «15th» day of the « following» month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « twenty» («20») days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

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

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

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

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

.1 That portion of the Contract Sum properly allocable to completed Work;

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

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

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

.1 The aggregate of any amounts previously paid by the Owner;

.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;

.3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and

.5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

« Retainage shall be held in the amount of 5% of the contractor's request for payment. »

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§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

« »

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

« When the value of the work reaches 50% of the scheduled value, including changes, the Owner may, but is not required to, reduce the amount of the retainage for subsequent pay requests. »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

« »

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

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

§ 5.2 Final Payment

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

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 all required close out documents, completed any project closeout checklists, punch lists for nonconforming work, and a final Application for Payment; and

.3 a final Certificate for Payment has been issued by the Architect.

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

« »

ARTICLE 6 DISPUTE RESOLUTION

In the case of any dispute, claim or question, or disagreement arising from or related to the Project or arising out of this Contract, the parties shall first attempt resolution through mutual discussion.

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

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§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[« »] Arbitration pursuant to Section 15.4 of AIA Document A201–2017

[« »] Litigation in a court of competent jurisdiction

[« »] Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction. Nothing in the Contract Documents shall be deemed a waiver by Owner of its sovereign immunity.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

« »

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

« »
« »

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

« »
« »

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

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

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§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

« »

§ 8.7 Other provisions:

§ 8.7.1 Equal Opportunity and Affirmative Action
The Contractor shall comply with applicable laws, regulations and special requirements of the Contract Documents regarding equal employment opportunity and affirmative action programs.

§ 8.7.2 Certifications
If not already provided, the Contractor will, immediately upon execution of this Agreement, provide the Owner with all certifications and representations required by the bid documents or required by Arkansas law.

« »

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2 Exhibit A, Insurance and Bonds

.3 AIA Document A201™–2017, General Conditions of the Contract for Construction as amended

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

« »

.5 Drawings

Title of Drawings exhibit:

To be determined« »

Number	Title	Date

.6 Specifications

Title of Specification exhibit:

To be determined

Section	Title	Date	Pages

.7 Addenda, if any:

Number	Date	Pages

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

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

[« »] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

« »

[« »] The Sustainability Plan:

Title	Date	Pages

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

« »

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

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
«XXX» « » *(Printed name and title)*	« XXX » « XXX » *(Printed name and title)*

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AIA® Document A101® – 2017 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the 07 day of October in the year 2024
(In words, indicate day, month and year.)

for the following **PROJECT**:
(Name and location or address)

CNC Shop Addition
Dassault Falcon jet
3801 East 10thStreet
Little Rock, AR 72203

THE OWNER:
(Name, legal status and address)

Dassault Falcon Jet Corp
3801 East 10th Street
Little Rock, AR 72203

THE CONTRACTOR:
(Name, legal status and address)

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

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

This document is intended to be used in conjunction with AIA Document A201®–2017, General Conditions of the Contract for Construction. Article 11 of A201®–2017 contains additional insurance provisions.

TABLE OF ARTICLES

A.1 GENERAL

A.2 OWNER'S INSURANCE

A.3 CONTRACTOR'S INSURANCE AND BONDS

A.4 SPECIAL TERMS AND CONDITIONS

ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE A.2 OWNER'S INSURANCE

§ A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

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§ A.2.2 Liability Insurance
The Owner shall be responsible for purchasing and maintaining the Owner's usual general liability insurance.

§ A.2.3 Required Property Insurance
§ A.2.3.1 Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ A.2.3.1.1 Causes of Loss. The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:
(Indicate below the cause of loss and any applicable sub-limit.)

Causes of Loss	Sub-Limit

§ A.2.3.1.2 Specific Required Coverages. The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:
(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)

Coverage	Sub-Limit

§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

§ A.2.3.3 Insurance for Existing Structures
If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure

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against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ A.2.4 Optional Extended Property Insurance.
The Owner shall purchase and maintain the insurance selected and described below.
(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

[ ] **§ A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance**, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.

[ ] **§ A.2.4.2 Ordinance or Law Insurance**, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.

[ ] **§ A.2.4.3 Expediting Cost Insurance**, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.

[ ] **§ A.2.4.4 Extra Expense Insurance**, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.

[ ] **§ A.2.4.5 Civil Authority Insurance**, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.

[ ] **§ A.2.4.6 Ingress/Egress Insurance**, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.

[ ] **§ A.2.4.7 Soft Costs Insurance**, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

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§ A.2.5 Other Optional Insurance.
The Owner shall purchase and maintain the insurance selected below.
(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

[ ] **§ A.2.5.1 Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information.
(Indicate applicable limits of coverage or other conditions in the fill point below.)

[ ] **§ A.2.5.2 Other Insurance**
(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage	Limits

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS
§ A.3.1 General
§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ A.3.2 Contractor's Required Insurance Coverage
§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.2.2 Commercial General Liability
§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than one million dollars ($ 1,000,000) each occurrence, one million dollars ($ 1,000,000) general aggregate, and one million dollars ($ 1,000,000) aggregate for products-completed operations hazard, providing coverage for claims including

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.1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
.2 personal injury and advertising injury;
.3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
.4 bodily injury or property damage arising out of completed operations; and
.5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

.1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
.2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
.3 Claims for bodily injury other than to employees of the insured.
.4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.
.5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
.6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
.7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
.8 Claims related to roofing, if the Work involves roofing.
.9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
.10 Claims related to earth subsidence or movement, where the Work involves such hazards.
.11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than two million dollars ($ 2,000,000) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than one million dollars ($ 1,000,000) each accident, one million dollars ($ 1,000,000) each employee, and one million dollars ($ 1,000,000) policy limit.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than ($) per claim and ($) in the aggregate.

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§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.
(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

[ ] **§ A.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:
(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

[ ] **§ A.3.3.2.2 Railroad Protective Liability Insurance**, with policy limits of not less than ($) per claim and ($) in the aggregate, for Work within fifty (50) feet of railroad property.

[ ] **§ A.3.3.2.3 Asbestos Abatement Liability Insurance**, with policy limits of not less than ($) per claim and ($) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

[ ] **§ A.3.3.2.4** Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

[ ] **§ A.3.3.2.5** Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

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[ ] **§ A.3.3.2.6 Other Insurance**

(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	Limits
Umbrella Liability	$10,000,000 per occurrence and project specific aggregate.

§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:

(Specify type and penal sum of bonds.)

Type	Penal Sum ($0.00)
Payment Bond	
Performance Bond	

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

Builders Risk Insurance

Builders Risk Insurance shall be provided by the Contractor with a policy limit equal to the full-completed value of the project. The policy shall include coverage on board "all risks" form including flood and earthquake. Transit and off-site storage coverage included. Permission for partial occupancy during construction. Deductible no greater than $5,000 per occurrence. All losses adjusted with and made payable to the Contractor and Owner. Fire and extended coverage including theft on equipment tools and materials owned or rented by the contractor.

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PART 1 - GENERAL

1.01 GOVERNING STANDARD DOCUMENT

A. "General Conditions of the Contract for Construction", Document No. A201 of American Institute of Architects, 2017 Edition is bound and incorporated into these specifications and is to be used as the General Conditions for this contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF DOCUMENT

AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

CNC SHOP ADDITION

THE OWNER:

Dassault Falcon Jet

THE ARCHITECT:

Polk Stanley Wilcox
801 South Spring Street
Little Rock, Arkansas 72201

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(911111031)

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

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

§ 1.1.2 The Contract

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

§ 1.1.3 The Work

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

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

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

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Initial Decision Maker

(Paragraphs deleted)

-Not Used

(Paragraphs deleted)

§ 1.9 CONFIDENTIALITY

§ **1.9.1** The Contractor shall not knowingly or negligently communicate or disclose at any time to any person or entity any information in connection with or pertaining to the Work or the Project, including the Record set of the Drawings, Specifications, and other documents which the Contractor is permitted to retain under Sections 1.7 and 1.8 above, except (i) with prior written consent of the Owner; (ii) information that was in public domain prior to the date of this Agreement; (iii) information that becomes part of the public domain by publication or otherwise not due to any unauthorized act or omission of the Contractor; or

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(iv) as may be required to perform the Work or by any applicable law.

§ **1.9.2** The Contractor, at any time upon the request of the Owner, shall immediately return and surrender to the Owner all copies of any materials, records, notices, memoranda, recordings, drawings, specifications, and mock-ups and any other documents or items furnished by the Owner or the Architect to the Contractor.

§ **1.9.3** The Contractor shall cause all Subcontractors and any other person or entity retained by Contractor performing any services, or furnishing any materials or equipment, for the Work to obligate themselves as set forth in this Section 1.9.

§ **1.9.4** The obligations contained in this Section 1.9 shall survive the complete performance of the Work or earlier termination of the Contract.

§ 1.2 Correlation and Intent of the Contract Documents

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

1. Amendments to the Contract
2. Agreement
3. General Conditions
4. Exhibits to the Contract
5. Addendum of Modification to Specifications and Drawings
6. Specifications
7. Drawings:
   a. Schedules
   b. Details
   c. Plans and or Elevations
   d. Figured Dimensions

All divisions of the Specifications shall be subject to the General Conditions. The terms and conditions of this Subparagraph 1.2.1 however, shall not relieve the Contractor of any of the obligations set forth herein.

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

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

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

§ 1.3 Capitalization

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

§ 1.4 Interpretation

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

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

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

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

§ 1.6 Notice

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

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

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

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

ARTICLE 2 OWNER

§ 2.1 General

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

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

§ 2.2 Evidence of the Owner's Financial Arrangements

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

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§ **2.2.2** Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contactor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require where no bona fide dspute exists; or (2) a change in the Work materially changes the Contract Sum by more than 5%. If the Owner fails to provide sch evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped.
However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

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

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

§ 2.3 Information and Services Required of the Owner

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

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

§ **2.3.3** If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

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

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

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

§ 2.4 Owner's Right to Stop the Work

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

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§ 2.5 Owner's Right to Carry Out the Work

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

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

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

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

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

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§ 3.3 Supervision and Construction Procedures

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

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

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

§ 3.4 Labor and Materials

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

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

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

§ 3.5 Warranty

(Paragraphs deleted)

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. The Contractor shall secure all written warranties of equipment or materials furnished to Contractor or its Subcontractors by any manufacturer or supplier and such warranties shall be deemed to insure to the benefit of Owner. Prior to Final Payment and acceptance of the Work, Contractor shall deliver to Owner digital copies of all Operation and Maintenance manuals and warranties on equipment and material furnished by all manufacturers and suppliers to the Contractor and all Subcontractors, with duly executed instruments properly assigning the warranties to the Owner. The Contractor shall bind each set of warranties together in a single volume, grouped by trade and properly indexed and deliver same to Owner.

§ **3.5.2** All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.
Contractor shall require each subcontractor to execute and deliver to Owner a warranty of the Work to be performed by such subcontractor, in form satisfactory to Owner, which shall equal or exceed the requirements of Section 3.5.1 above and shall be freely assignable by Owner. Such warranty by a subcontractor shall be enforceable directly by Owner against each such subcontractor and shall be in addition to any guaranty or warranty provided by Contractor herein. All Contractor's warranties and representations contained in this Section 3.5, and elsewhere in the Contract Documents, shall survive the complete performance of the Work or earlier termination of the Contract.

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§ **3.5.3** All Contractor's warranties and representations contained in this Section 3.5, and elsewhere in the Contract Documents, shall survive the complete performance of the Work or earlier termination of the Contract.

§ 3.6 Taxes

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

§ 3.7 Permits, Fees, Notices and Compliance with Laws

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

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

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

§ 3.7.4 Concealed or Unknown Conditions

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

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

§ **3.7.6** The Contractor shall call for all inspections required by any Government Authorities.

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

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

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

§ 3.9 Superintendent

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

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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

§ 3.10 Contractor's Construction and Submittal Schedules

(Paragraph deleted)

§ 3.10.1 The Contractor, within fifteen (15) days after the Notice to Proceed shall submit for the Owner's and Architect's information a Contractor's construction Critical Path Method ("CPM") schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. This CPM schedule shall show start and finish dates for all activities, including all critical-path items. Activities shall be broken down separately to show material deliveries and labor activities on a floor-by-floor and on an area-by-area basis.

§ 3.10.1.1 The Contractor shall perform the Work in accordance with he Schedule as well as within the dates specified in the Contract Documents for Time(s) of Completion of the Work. The time set forth in the Contract Documents for Time(s) of Completion must govern, and the Schedule must be adjusted to meet the date(s). The Contractor shall maintain such Schedule on a current basis in accordance with the Contract Documents and Shall keep proper records to substantiate actual activity durations and completion dates.

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

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.10.4 The construction CPM Schedule shall set forth any dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents. The CPM Schedule shall contain starting and completion dates for all phases of the Work including, but not limited to, major work items by location and floor level, roughing in dates, and equipment and material delivery dates. The Schedule shall be reviewed at the weekly construction meetings to be held at the job Site and at each meeting the Contractor will provide a current two-week look ahead CPM schedule for review and comment. A copy of the Schedule shall be maintained at all times on the job Site, and revised and updated copies shall be provided to the Owner. The Schedule and revisions thereof prepared by the Contractor shall be furnished to the Owner and the Architect for informational purposes only. Any material revisions to the Schedule shall be accompanied by a written explanation of the reasons for such revisions. Upon request Contractor shall provide Owner with a computer disk containing the Schedule. The Contractor shall monitor the progress of the Work relative to the Schedule and promptly advise the Owner of any material delays in the Work. The Contractor shall submit a monthly schedule update in a milestone format showing major items of work for the Work.

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§ 3.10.5 Should the detailed Schedule show the Contractor to be thirty (30) days or more behind schedule for the Work as a whole, at any time during construction. Contractor shall, upon Owner's request, prepare a "Recovery Schedule" and report to explain and display how Contractor intends to regain compliance with the detailed Schedule as soon as practicable.

§ 3.10.6 If the Owner reasonably determines through reasonable evidence that the performance of the Work is behind Schedule such that the Contractor will be unable to achieve Substantial Completion of the Work prior to expiration of the Contract Time, the Owner shall have the right, but no obligation, to order the Contractor to take corrective measures necessary to expedite the progress of construction, including, without limitation, (i) working additional shifts or overtime, (ii) supplying additional manpower, equipment and facilities and (iii) other similar measures (collectively "Extraordinary Measures"). The determination of whether the progress of the Work is behind schedule shall take into account any extensions in time to which the Contractor is entitled (including under Subparagraph 8.3.1 below). The Owner is hereby permitted to continue use of Extraordinary Measures until the progress of the Work complies with the stage of completion required by the Contract Documents. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the Schedule. In no event shall the Owner have control over, charge of, or any responsibility for construction means, methods, techniques, sequences or procedures or for safety precautions and programs in connection with the Work, notwithstanding the rights and authority granted in this Subparagraph 3.10.6 or elsewhere in the Contract Documents. The Owner may exercise its rights under or pursuant to this Subparagraph 3.10.6 as frequently as necessary to ensure that the Contractor's performance of the Work will comply with the Schedule and the Contract Documents. The cost of Extraordinary Measures will be the Contractor's responsibility to the extent the delay being remedied by such Extraordinary Measures is not an Excusable Delay as defined in Section 8.3.1 herein.

§ 3.11 Documents and Samples at the Site

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

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

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

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

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

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

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

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

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

§ 3.13 Use of Site

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

§ 3.14 Cutting and Patching

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

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

§ 3.15 Cleaning Up

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

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§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

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

§ 3.17 Royalties, Patents and Copyrights

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

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Airport Authority, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 3.18.3 Contractor specifically agrees that it shall defend, indemnify and hold Owner harmless from any assertion of security interest, claim or filings of mechanic's liens by Subcontractors, Sub-subcontractors or any other persons or entities which provided labor, materials, equipment and/or services to the Project and/or the Work, but only if the Owner is in material breach of its payment obligations under the Agreement. Contractor shall defend Owner at Contractor's own expense, from all such assertions, liens and/or claims if Owner so request in writing, Contractor agrees that it shall pay all reasonable attorney's fees, consultant fees, court costs and related expenses and other costs, expenses, or fees which Contractor or Owner incur in responding to such assertions, liens and claims. In the event that assertions, liens or claims are asserted or filed by anyone in relations to labor, materials, services and/or equipment furnished by the Contractor or any of its Subcontractors, Sub-contractors or other persons or entities, Contractor agrees to have the same discharges by posting a bond with the appropriate court, authorities or otherwise, within ten (10) days of receipt of notice by Owner. In the event that such lies are not so discharged, Owner shall have the right to terminate the Agreement and/or the bond-off said lien(s) and withhold or recover from Contractor all costs incurred as a result thereof, including but not limited to, bond premiums and attorney's fees. The Owner's remedies under this paragraph are in addition to, and not a limitation of, any rights Owner may have under this Agreement or other rights Owner may have under law.

§ 3.18.4 The terms of Section 3.18 (and other indemnification obligations under the Contract) shall survive the expiration or termination of this Contract.

ARTICLE 4 ARCHITECT

§ 4.1 General

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

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

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§ 4.2 Administration of the Contract

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

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

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

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and

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records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

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

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

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

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

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

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

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Contractor shall take commercially reasonable steps to competitively bid each trade to three (3) subcontractors. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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

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

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

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§ 5.3 Subcontractual Relations

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

§ 5.4 Contingent Assignment of Subcontracts

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

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

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

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§ 6.2 Mutual Responsibility

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

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

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

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

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

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

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

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work. Notwithstanding anything contained in the Contract Documents to the contrary, a change in the GMP or the Schedule shall be accomplished only by Change Order or Construction Change Directive. Contractor shall not receive any compensation or any adjustment in the GMO or Contract Time or Schedule in conjunction with any Work, labor, materials, equipment, or other activities of the Contractor pertaining to the Project unless such Work, labor, materials, equipment or other activities are authorized in a Change Order or Construction Change Directive, as more specifically described in Paragraph 7.3. No course of conduct or dealing between the parties, no express or implied acceptance of altercations or additions to the Work shall be the basis for a claim that the requirement of written Change Orders has been waived.

§ **7.1.4** If the Contractor believes a change in the Work has been directed for which an adjustment in the GMP or Schedule is due, and there is not a written directive for such a change signed by the Owner, then the Contractor shall, as a condition precedent to preservation for any Claim pertaining to such change, give written notice to the Owner and Architect prior to proceeding with any of the Work involved in the change (except for emergency conditions endangering life or property, as provided in Paragraph 10.3 of these General Conditions). The written notice shall identify (i) the scope and nature of the change in the Work and (ii) the impact said change will have upon the GMO or Schedule. In the notice; the Contractor shall provide and identify specific cost

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impacts if any and the specific extent of additional time to perform if any sought for adjustment to the GMP and Schedule by reason of the change. In the alterative, Contractor shall use its best efforts to provide specific maximum estimates of the costs and additional time required as a result of the alleged change. The Contractor must deliver written notice to the Owner within seven (7) days of the event giving rise to the alleged change. Contractor's failure to give timely written shall constitute a waiver of any claim adjustment to the GMP or Schedule not otherwise approved in writing by the Owner, it being expressly understood that such notice, timely given, is a condition precedent to Contractor's claim.

§ 7.2 Change Orders

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

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

§ 7.3 Construction Change Directives

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

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

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
.2 Unit prices stated in the Contract Documents or subsequently agreed upon;
.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.4.

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

.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
.5 Costs of supervision and field office personnel directly attributable to the change.

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

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

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

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§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

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

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

§ 7.4 Minor Changes in the Work

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

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

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

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

§ 8.2 Progress and Completion

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

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

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

§ 8.3 Delays and Extensions of Time

(Paragraph deleted)

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner, or of an employee of Owner, or of a separate contractor employed by the Owner; or by changes ordered in the Work (not caused or resulting from the failure of Contractor or its Subcontractors, Suppliers, or Sub-subcontractors (of any tier) to comply with their obligations arising under the Contract); or by adver e weather conditions abnormal for the period of time (subject to such conditions or restrictions as provided in the Agreement or Section 14.1.6.2 below); or by labor disputes (not arising from the labor practices of Contractor or its Subcontractors, Suppliers, or Sub-subcontractors of any tier), fire (not caused by the negligence or wrongful acts of the Contractor or its Subcontractors, Suppliers, or Sub-subcontractors of any tier); unusual delay in deliveries (not attributable to or caused by the negligence or wrongful acts of the Contractor or its Subcontractors, Suppliers, or

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Sub-subcontractors of any tier), unavoidable casualties or other causes beyond the control and reasonable ability to avoid by the Contractor or its Subcontractors, Suppliers, or Sub-subcontractors (of any tier) (such causes are collectively referred to in the Contract Documents as causes "not the fault of the Contractor" or "Excusable Delay"), then the Contract Time shall be extended by Change Order by the number of days by which the critical path to completion of the Project has been delayed by the event giving rise to the right to an extension. Notwithstanding the foregoing, the Contractor acknowledges and agrees that adjustments in the Contract Time and the Contract Sum {for substantiated direct out-of-pocket costs incurred by the Contractor and its Subcontractors from the delay) will be permitted for a delay only to the extent such delay negatively impacts the Critical Path of the Project Schedule. A copy of any Claim for extension of the Contract Time shall be delivered to the Owner, and the Contractor shall immediately take all steps reasonably possible to lessen the adverse impact of such delay. Requests for extensions of Contract Time due to adverse weather or conditions not reasonably anticipated and not due to Contractor's fault or negligence will be considered only because of such conditions preventing the timely execution of the critical path of the Schedule. Furthermore, any extension of the Contract Time granted shall be net of any unexcused delays in the Work caused by or resulting from any act, fault or omission of the Contractor or its Subcontractors and shall also be net of any contingency or float time allowance in the Schedule.

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

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

§ 8.3.4 Unusually Severe Weather. The Contractor, in submitting his bid, acknowledges that he has taken into consideration normal weather conditions. "Normal weather conditions" means statistically average weather, based on weather data for the past ten (10) years in reasonable proximity to the Project site. Normal weather conditions shall be determined from the public historical records available from the nearest National Oceanic and Atmospheric Administration (NOAA) site closest to the site of the Work for the same month and include days having adverse weather conditions. To the extent such adverse weather days exceed those included under normal weather conditions, they are hereby deemed "unusually severe weather" days. No additional compensation will be paid to the Contractor because of adverse weather conditions; however, an extension of time for unusually severe weather will be provided under the following circumstances:

a. The request for additional time shall be substantiated demonstrating unusually severe weather; that is, the average number of days experiencing precipitation or other adverse weather conditions exceed the average number of wet weather days or other adverse weather conditions in a given month, as determined by the nearest NOAA site for the same month and location of the work.

b. The request for additional time shall be further substantiated by weather data collected during the period of delay at the site or in reasonable proximity to the Project site. Said data must demonstrate that unusually severe weather occurred; an actual departure from normal weather conditions occurred at or in reasonable proximity to the site during the month in question.

The extension must be supported by a delay in the completion of the Work shown on the critical path of the approved schedule for the Work. Extensions will be granted only for delays in performance of the Work on the critical path of the schedule for the Work, not for the portion of any delay which consumes only "float" time. To qualify as an actual unusually severe weather delay day entitling the Contractor to an extension, abnormal adverse weather conditions must prevent work on critical activities for fifty percent (50%) or more of the Contractor's scheduled work day.

Notwithstanding anything herein to the contrary, a request for extension of time based on unusually severe weather must be made in writing within ten (10) calendar days of the completion of the calendar month during which abnormal weather is claimed at the site.

All of the evidence and data supporting the request (including both historical data and the recordings at the site during the time of delay) must be furnished to the Owner before any consideration will be given to the request. That supporting data shall be submitted by the end of the calendar month following the month for which the request is made (or as soon thereafter as shall be reasonable under the circumstances) or the claim will be deemed waived.

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ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

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

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

§ 9.2 Schedule of Values

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

§ 9.3 Applications for Payment

(Paragraph deleted)

§ 9.3.1 Contractor shall submit to the Architect and Owner and itemized Application for Payment in accordance with Article 12.1.3 of the Agreement for operations completed in accordance with the Schedule of Values including the trade payment breakdown. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and reflecting retainage if provided for in the Contract Documents. Each Application shall also include an affidavit or affirmation by the Contractor setting forth the following:

1. A certification that all Work for which payment is requested has been completed in accordance with the Contract Documents.
2. The names and addresses of all Subcontractors and materialmen.
3. The contract amount of each such Subcontractor, the cost of materials acquired or to be acquired form such materialmen with whom the Contractor has contracted directly, and the amounts paid and owed to each Subcontractor and materialmen.
4. The contract amount of the contractor's Contract with the Owner, including all adjustments.
5. The amount paid by the Owner to the Contractor to the date of Application.
6. The amount of the current Application.
7. The balance due on the Contract amount after such payment is made.
8. The amount of money retained by the Owner and the amount of the Work that has been completed.
9. The Contractor will furnish with each Application for Payment releases of liens and claims confirming that all amounts included in previous progress payments for Work executed by Subcontractors have been paid in full to such Subcontractors or have been withheld for a proper reason and state such reason. Nothing contained in this provision shall place any additional responsibilities on the Owner, its representatives or the Architect other than those indicated in other relevant provisions in this Contract.

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

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

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

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

(Paragraph deleted)

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

§ 9.4 Certificates for Payment

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

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

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

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

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

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

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ **9.5.4.1** Owner shall not be deemed to be in breach of this Contract by reason of the withholding of any payment pursuant to any provision of the Contract Documents if either the Work in question shall have been rejected by any governmental Authorities, or the Work is not in accordance with the Contract Documents, or the Owner reasonably believes any of the conditions of Subparagraph 9.5.1 herein exist.

§ 9.6 Progress Payments

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

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

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

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

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

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

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

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

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon

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seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

(Paragraphs deleted)

§ 9.8.1 The date of Substantial Completion of the Work (or designated portion thereof as may be hereafter agreed by Owner) is the date determined by the Owner when the Work is sufficiently complete, in accordance with the Contract Documents, so that the Owner (or its tenants) can occupy or utilize the Work or such designated portion thereof for the use for which it is intended with all of the installations, parts and systems related thereto and required by the Work hereunder functional, accessible, operable and usable by the Owner for their full and unimpeded, intended usage. Such completion shall include, as applicable all certificates of occupancy or other permits of authorizations by governmental agencies having jurisdiction thereof, necessary to permit such usage. Only minor and incidental corrective work under Owner-approved punchlists and final cleaning (if required) beyond cleaning needed for the Owner's full use may remain for Final Completion.

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

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

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

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

§ 9.9 Partial Occupancy or Use

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

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

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

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

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

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

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

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

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

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

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and

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.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

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

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

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

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

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

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

§ 10.2.8 Injury or Damage to Person or Property

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

§ 10.3 Hazardous Materials and Substances

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

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

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

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

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

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

§ 10.4 Emergencies

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

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

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

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

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

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

§ 11.1.4 Coverages. During the entire term of the Construction Contract and any extension thereof, Contractor shall obtain and maintain, at the Contractor's expense, the insurance required in this Article 11. Such insurance shall be kept in full force and effect until acceptance of the Work by Owner except as otherwise noted. Before proceeding with any Work, Contractor shall furnish Owner, Architect and Lender and any governmental agency designated by Owner a certificate of insurance in acceptable form, executed in duplicate by insurance companies approved by Owner to evidence the insurance required of contractor as set forth below. Certificates, which deviate from this form or which, in Owner's, Architect's or

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Lender's opinion are incomplete will be returned for resubmission by Contractor. Owner, Airport Authority and Architect shall be named as additional insured on all insurance policies required with the exception of worker's compensation and employer's liability insurance. All required insurance policies, except worker's compensation and employer's liability shall be endorsed to primary and non-contributory to any insurance otherwise carried by Contractor, Owner, Architect and Lender with respect to the Work. Such Insurance shall not be materially modified in any manner that deviates from the insurance companies, mailed to Owner, with copies to Architect and Lender, via Registered Mail thirty (30) days in advance of such modifications, expiration, or cancellation. In the event of such cancellation notice, Contractor, at Contractors expense, shall obtain replacement insurance coverage from other insurance companies to the cancellation of the original coverage. The presence of the Project Site of representatives of the Owner and Architect or the participation of the Owner's or Architect's representatives in the Project shall not invalidate any of Contractor's insurance.

COVERAGE	LIMITS
a) Worker's Compensation	Statutory Limits
b) Employer's Liability	$1,000,000 per occurrence
c) Commercial General Liability	$1,000,000 combined single limit bodily injury and property damage per occurrence and Project specific aggregate.
d) Automobile Liability	$2,000,000 combined single limit injury and property damage per occurrence. If contractor or any Subcontractor is a transporter of hazardous materials, such transporter's Automobile Liability policy shall have all pollution exclusion deleted.
e) Umbrella Liability (following form of the Commercial General Liability	$20,000,000 per occurrence and Project specific aggregate
f) Builder's Risk Coverage on board "all risk" form including flood and earthquake Transit and off-site storage coverage included Permission for partial Occupancy during Construction Deductible no greater than $5,000 per occurrence All losses adjusted with and made payable to Contractor and Owner.	Policy limit equal to the full-completed value of Project.
g) Fire and extended coverage including theft on equipment tools and materials owned or rented by Contractor.	Amount sufficient to fully protect against loss

If Contractor subcontracts any of the Work, Contractor shall require each Subcontractor to have the insurance coverage required by this Section, except for Excess Umbrella Liability which shall be no less than the amount as agreed to by Owner and Contractor. Contractor shall furnish Owner and Lender evidence thereof before each subcontractor commences any of the Work. Contractor's obtaining of the insurance required by this Section *9* shall in no manner lessen, diminish of affect Contractor's obligations set forth in any provision of this Construction Contract. Contractor shall also carry additional insurance as may be required by any law. All insurance policies required of Contractor and Subcontractor's shall contain a waiver of subrogation clause wherein no insurance company shall have any right of recovery against Owner, Architect or Lender.

All insurance required in this Section shall be provided by financially responsible insurance carriers authorized to do business in the state of Arkansas and rated by A.M. Best Rating Services as A-, IX or better.

Owner and Contractor acknowledge that the insurance requirements set forth in the Contract Documents may be required by the Owner's insurance carrier to include additional coverage to the extent such coverage are

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reasonably available, and Contractor agrees to enter into suitable modifications of the provisions hereof upon the request of the Owner, provided Owner bears any additional cost occasioned thereby.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. If the property insurance requires deductibles the Owner shall pay costs not covered because of such deductibles, unless the loss claimed was caused by the negligence, or willful acts of the Contractor or its Subcontractors of any tier.

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

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

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

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

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§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance
The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

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

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

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

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

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

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

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reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

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

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

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

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

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

§ 12.3 Acceptance of Nonconforming Work

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

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

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

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

§ 13.3 Rights and Remedies

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

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

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§ 13.4 Tests and Inspections

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

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

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

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

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

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

§ 13.5 Interest

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

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

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

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;

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

.3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or

.4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

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

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

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

§ 14.2 Termination by the Owner for Cause

(Paragraphs deleted)

§ 14.2.1

(Paragraphs deleted)

Should Contractor: (a) cease work or fail to maintain the Project Schedule, as defined in Subparagraph 4.5 of the Agreement, for a continuous and-uncorrected period of 30 days due to reasons within the control of Contractor; (b) fail to prosecute the Work diligently (including but not limited to failure to provide sufficient numbers of skilled workers or proper materials, or failure to adhere to the applicable schedules as required to meet the performance criteria of Article 4 of the Agreement and 14.2.l(a), above) due to reasons within the control of Contractor; (c) fail to make payment to Subcontractors or suppliers for materials or labor in accordance with its agreements with Subcontractors or suppliers, provided that Owner shall have timely paid Contractor all sums due under the Contract; (d) cause delay or disruption of the Project Schedule for a continuous and uncorrected period of30 days due to reasons within the control of Contractor; (e) repeated failure to perform any of its other obligations under the Contract Documents; (t) repeated failure to perform any aspect of the Work in substantial accordance with the Contract Documents; (g) perform the Work in a manner that is continuously rejected, without Contractor's correction, by the Owner, the Architect or governmental inspectors having jurisdiction over the Project, for a period of 30 days due to reasons within the control of Contractor (for example, not due to improper design of the Work); (h) File bankruptcy, assign assets for the benefit of creditors, become insolvent, or be unable or fail to pay its obligations as they mature; or (i) disregard material Legal Requirements in the performance of the Work; then Owner may deem Contractor to be in default and, at Owner's sole option, and without limitation to any other remedies available at law or in equity, may take one or more of the following actions (provided that Contractor has failed to take and maintain reasonable steps to cure such default):

1. Undertake and obtain temporary possession of all of Contractor's materials and equipment intended for or related to performance of the Work (located on the Project site) for a period up to 120 hours in order to assure availability thereof for the completion of the Work;
2. Upon 72 hours prior written notice to Contractor of the default (and provided that the default is not fully cured within the 72 hours or that a bona fide cure has not demonstrably commenced), take appropriate steps to cure and remedy defaults at Contractor's expense, and deduct the cost thereof, plus direct identifiable Owner costs, from the Contract Price. However, where the work of Subcontractors will be materially delayed. Owner may proceed without notice to cure the default at Contractor's expense, and deduct the cost thereof, plus direct identifiable Owner costs, from the Contract Price; or

3. Upon 72 hours prior written notice to Contractor of the default (and provided that the default is not fully cured within the 72 hours or that a bona fide cure has not demonstrably commenced) give Contractor written notice of termination of this Contract and, at Owner's sole option, take permanent possession of all of Contractor's material, equipment, manuals, records, drawings, and all other similar items intended for the performance of the Work (located on the Project site), which Contractor hereby assigns and transfers to the Owner for such purposes subject only to Owner's exercise of its option under this Subparagraph 14.2.1.3.

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

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

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

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

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

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

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

§ 14.4 Termination by the Owner for Convenience

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

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

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

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

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

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

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

§ 15.1.3 Notice of Claims
§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

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

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

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

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

§ 15.1.6 Claims for Additional Time
§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, if a delay is not due to the fault of Contractor or its Subcontractors, written notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions had a adverse effect on the scheduled construction days for which delays are claimed. It is understood that the Contractor has included the appropriate and expected number of adverse weather days per month in its Schedule as determined by NOAA standards for the Project location. The Contractor shall not be entitled to additional time due to adverse weather unless (a) the requirements to Section 8.3 are met, and (b) there are more than, the number of adverse weather days as indicated in the Schedule in the month for which the additional time is claimed. The number of unused or unclaimed adverse weather days per month shall be cumulative; that is, if all of the adverse weather days allotted for a particular month are not claimed as such by the Contractor, those unused or unclaimed days shall accrue for the Contractor's use in another, subsequent month.

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

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§ 15.1.7 Waiver of Claims for Consequential Damages

Notwithstanding anything to the contrary and to the extent not covered by the insurance policies required by the Contract Documents, the Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

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

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

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

§ 15.2 Initial Decision

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

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

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

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

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

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

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation

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within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

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

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

§ 15.3 Mediation

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

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

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

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

§ 15.4 Arbitration

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

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

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

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

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§ 15.4.4 Consolidation or Joinder

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

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

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

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PART 1 - GENERAL

1.01 WORK UNDER THIS CONTRACT

A. Construction of Hangar 12 Service Center Warehouse Addition for Dassault Falcon Jet in Little Rock, Arkansas as shown on the Drawings and described in the Project Manual.

1.02 RESPONSIBILITIES OF CONTRACTOR

A. Except as otherwise specifically stated in the contract, Contractor shall provide and pay for all materials, labor, tools, equipment, transportation, superintendence, temporary construction of every nature, taxes legally collectible because of the Work and all other services and facilities of any nature necessary to execute Work as shown and/or specified under the contract and deliver it complete in every respect within specified time.

B. If, during the course of construction of this project, the Contractor discovers errors, inconsistencies or omissions in the Contract Documents, the Contractor will report them to the Architect who will issue written instructions to the Contractor. If the Contractor performs Work knowing there is an error, inconsistency or omission in the Contract Documents without giving notice to the Architect or receiving written instruction from the Architect, the Contractor assumes responsibility for the Work and will bear all costs associated with the performance or correction of the Work.

1.03 PERMITS

A. Utilizing the contract documents (Project Manual and Drawings) prepared by the Architect and his Consultants, along with information provided by the Owner or his Consultants, the Contractor is responsible for securing permits required to successfully complete the project. This responsibility includes payment for the permit and coordination of all submittals.

B. Storm Water Discharge Permit: Contractor shall be responsible for obtaining this permit from Arkansas Department of Environmental Quality for construction sites where one (1) acre or more is disturbed, and meet all other storm water regulations. Contractor shall keep a copy of his Storm Water Discharge Permit on the jobsite at all times.

1.04 COORDINATION

A. Provide administrative and supervisory requirements necessary for coordination of work, including meetings, administrative and supervisory personnel, survey, records, reports, limitations for use of site, installation provisions, cutting and patching, cleaning, protection, and conservation.

B. Coordinate construction activities included under various sections of these specifications to assure efficient and orderly installation of each part of the work. Coordinate construction operations included under different sections of the specifications that are dependent upon each other for proper installation, connection, and operation.

1. Where installation of one part of the work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain its best results.
2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

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

D. Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the work. Such administrative activities include, but are not limited to, the following:
1. Preparation of schedules
2. Installation and removal of temporary facilities
3. Delivery and processing of submittals
4. Progress meetings
5. Project close-out activities

E. Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water and materials.

1.05 PROJECT MEETINGS

A. Pre-Construction Meeting: Within 15 days after execution of agreement, the Architect will prepare an agenda and schedule a pre-construction meeting. Written notice of meeting date, time and place, and agenda items will be sent to the Owner, Contractor, and Separate Contractors. The Contractor shall be responsible for notifying major subcontractors of meeting.

B. Progress Meetings: The Contractor shall schedule and hold regular progress meetings to coordinate, expedite and schedule work of all contracts. Hold additional meetings as progress of work dictates or when requested by the Architect. Send written notice of meeting date, time and place, and agenda of meeting to the Owner, Architect/Engineer, Separate Contractors, Subcontractors and others as pertinent to agenda. Record results of meetings and distribute copies to everyone in attendance and to others affected by the decisions or actions resulting from each meeting.

1.06 CONTRACTOR USE OF PREMISES

A. Confine operations at site to areas permitted under Contract. Portions of site beyond areas on which work is indicated are not to be disturbed.

B. Limit use of premises to work indicated, allowing for Owner occupancy and public use.
1. Keep existing driveways and entrances serving premises clear and available to Owner, employees, and public at all times. Do not use these areas for parking or storage of materials.

2. Do not unreasonably encumber site with materials or equipment.
3. Lock automotive type vehicles, such a passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, to prevent unauthorized use. Do not leave vehicles or equipment unattended with motor running or ignition key in place.
4. Open fires will not be permitted on premises.

1.07 INDUSTRY STANDARDS

A. Applicability of Standards: Except where more explicit or stringent requirements are written into the contract documents, applicable construction industry standards have the same force and effect as if bound into or copied directly into the contract documents. Such industry standards are made a part of the contract documents by reference. Individual specification sections indicate which codes and standards the Contractors must keep available at project site for reference.

B. Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of contract documents.

C. Conflicting Requirements: Where compliance with two or more standards is specified, and where these standards establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the contract documents specifically indicate otherwise. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Architect for a decision before proceeding.

D. Copies of Standards: The Contract Documents require that each entity performing work be experienced in that part of the work being performed. Each entity is also required to be familiar with industry standards applicable to that part of the work. Copies of applicable standards are not bound with the contract documents. Where copies of standards are needed for proper performance of the work, the Contractors are required to obtain such copies directly from the publication source.

E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where acronyms or abbreviations are used in the specifications or other contract documents they are defined to mean the recognized name of the trade association, standards generating organization, governing authority, or other entity applicable to the context of the text provisions.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

1.02 DEFINITIONS

A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.03 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

PART 2 - PRODUCTS - (Not Applicable)

PART 3 - EXECUTION

3.03 SCHEDULE OF UNIT PRICES

A. The Bidder shall **include in the Base Bid** the lump sum allowances indicated on the Bid Form (00 4000)

Lump Sum Allowance 1: For undercut of unsuitable material at building and pavement areas and off-site disposal. This is in addition to the excavation and stripping required to establish grades shown on the drawings which is to be included in the Base Bid.

Lump Sum Allowance 2: For importing, placing and compacting select fill material at undercut areas only. This is in addition to the fill material required to establish grades shown on the drawings which is to be included in the Base Bid.

B. Bidder understands that the Owner reserves the right to review and or negotiate Unit Prices that are deemed to be not in accordance with current market value of proposed services.

C. In the event the actual quantities are greater or less than the given volumes, the unit prices stated will be used to adjust the contract accordingly.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Make submittals required by Contract Documents; revise and resubmit as necessary to establish compliance with specified requirements. Submittals which are received from sources other than through the General Contractor's office will be returned by the Architect without action.

B. Submit documents in the following formats:
   1. Color selection requires actual materials or color cards. Reproductions and electronic copies will not be accepted.
   2. Electronic submittals of product and material data and shop drawings are preferred unless specifically requested to be hard copy by Architect.

C. Contractor's submittal of (and Architect's review of) shop drawings, product data or samples which relate to work not complying with requirements of Contract Documents, does not constitute an acceptable or valid request for a substitution, nor approval thereof.

1.02 ELECTRONIC SUBMITTAL PROCEDURES

A. Summary
   1. Shop drawing and product data submittals shall be transmitted to Architect in electronic (PDF) format.
   2. The electronic submittal process is not intended for color samples, color charts, or physical material samples.

B. Procedures
   1. Contractor shall review and apply electronic stamp certifying that the submittal complies with the requirements of the Contract Documents including verification of manufacturer / product, dimensions and coordination of information with other parts of the work.
   2. Contractor shall transmit each submittal to Architect.
   3. Architect / Engineer review comments will be made available.
   4. Distribution of reviewed submittals to subcontractors and suppliers is the responsibility of the Contractor.
   5. Submit electronic copies of reviewed submittals at project closeout for record purposes in accordance with Section 01 3250 – Closeout Submittals

C. Contractor's submittal of (and Architect's review of) shop drawings, product data or samples which relate to work not complying with requirements of Contract Documents, does not constitute an acceptable or valid request for a substitution, nor approval thereof.

1.03 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section.

1.04 QUALITY ASSURANCE

A. Coordination of Submittals: Prior to each submittal, carefully review and coordinate all aspects of each item being submitted. By affixing Contractor's approval stamp to each submittal, certify that coordination has been performed.

B. Verify that each item and submittal for it conforms in all respects with specified requirements.

1.05 TIMING OF SUBMITTALS

A. General: Make submittals far enough in advance of scheduled dates of installation to provide required time for reviews, securing necessary approvals, possible revision and resubmittal, placing orders and securing delivery.

B. Owner will not bear costs of delays due to late submittals.

1.06 COORDINATION AND SEQUENCING

A. Coordinate preparation and processing of submittals with performance of work so that work will not be delayed by submittals.

B. Coordinate and sequence different categories of submittals for same work, and for interfacing units of work, so that one will not be delayed for coordination of Architect's review with another.

PART 2 - PRODUCTS

2.01 PROGRESS SCHEDULE

A. Within 7 days after Notice to Proceed, submit to Architect a bar-chart type progress schedule indicating time bar for each trade or operation of work to be performed. Time bar shall demonstrate planned work, properly sequenced and intermeshed, for expeditious completion of Work. Identify phases if required.

B. Distribute progress schedule including all updates to Architect, Owner, subcontractor, suppliers, fabricators, and others with need-to-know schedule compliance requirements. Post copy in field office.

2.02 SCHEDULE OF VALUES

A. Immediately after execution of the Contract Documents, Contractor shall submit for approval a Schedule of Values totaling the amount of the Contract.

B. Schedule of Values line items are to be numbered and ordered in accordance with CSI Master Format numbering system. Refer to the Table of Contents in this Project Manual for correct numbering.

2.03 SCHEDULE OF SUBMITTALS

A. In accordance with General Conditions Document AIA A201, within 30 calendar days after execution of the Contract Documents, Contractor shall submit a Schedule of Submittals to the Architect. Note any critical submittals and long lead items that need to be expedited.

1. Unless otherwise agreed between Contractor and Architect, the Architect will have 10 working days for initial review of submittals.

2.04 LIST OF SUBCONTRACTORS

A. Immediately after execution of the Contract Documents, Contractor shall submit for approval a listing of all subcontractors to be used for the project stating portions of Work to be performed, address and telephone number of firm, and contact at firm familiar with project.

B. If all subcontrators have not been determined, submit a partial listing with regular updates indicating newly added subcontractors.

2.05 SUBSTITUTION REQUESTS

A. Products specified herein establish a quality standard for comparison by manufacturers of similar products. Products of other manufacturers may be substituted for those specified herein on an "Approved Equal" basis. DO NOT propose the substitution of products that do not meet or exceed the quality standards established by the specified product. Products proposed as equivalent MUST be submitted through the General Contractor for review by the Architect after the Contract for Construction is awarded. DO NOT request approval of products prior to the awarding of the contract.

B. Requests for substitution will be reviewed when extensive revisions to contract documents are not required and changes are in keeping with general intent of Contract Documents; when timely, fully documented and properly submitted; and when one or more of following conditions is satisfied, all as judged by Architect/Engineer. Otherwise, requests will be returned without action except to record non-compliance with these requirements.

1. Where request is directly related to an "or equal" clause or other language of same effect in Contract Documents.
2. Where required product, material or method cannot be provided within Contract Time, but not as a result of Contractor's failure to pursue the Work promptly or to coordinate various activities properly.

3. Where required product, material or method cannot be provided in a manner which is compatible with other materials of the Work, or cannot be properly coordinated therewith, or cannot be warranted as required, or cannot be used without adversely affecting Owner's insurance coverage on completed work, or will encounter other substantial non-compliances which are not possible to otherwise overcome except by making requested substitution, which Contractor thereby certified to overcome such non-compatibility, non-coordination, non-warranty, non-insurability or other non-compliance as claimed.
4. Where required product, material or method cannot receive required approval by a governing authority, and requested substitution can be so approved.
5. Where substantial advantage is offered Owner, in terms of cost, time, energy conservation or other valuable considerations, after deducting offsetting responsibilities Owner may be required to bear increased cost of other work by Owner or separate contractors, and similar considerations.

C. **SUBSTITUTIONS REQUESTS MUST BE SUBMITTED WITHIN 30 DAYS AFTER THE DATE OF THE NOTICE TO PROCEED**. Substitution requests received after that time will be returned and the Contractor will be required to provide the product specified, except as follows:
1. Unavailability of product, material or method, not due to the Contractor's failure to pursue the work promptly or to coordinate various activities properly.

D. Submit request for substitutions in writing using the Substitution Request form found at the end of this Section. This is the only form that will be accepted.

E. Submit substitution request, fully identified for product or method being replaced by substitution, including related specification section and drawing number(s), and fully documented to show compliance with requirements for substitutions. Include manufacturer's product data/drawings, description of installation methods, material samples where applicable, complete color and finish selection cards or samples, Contractor's detailed comparison of significant qualities between specified item and proposed substitution, statement of effect on construction time and coordination with other affected work, cost information or proposal, and Contractor's statement to the effect that proposed substitutions will result in overall work equal-to-or-better-than work originally indicated.

F. Failure to provide the requested data and samples within the specified time frame will be grounds for rejection as a comparable product.

G. Do not incorporate substitutions into Shop Drawings until they have been reviewed by the Architect and written permission has been issued to make the proposed substitution a part of the contract.

H. Under no circumstances shall Architect's review of any such substitution relieve Contractor from timely, full and proper performance of Work.

I. In the event that the substitution of a product by the General Contractor necessitates the redrawing, redesign, modification or other change to the Contract Documents, the General Contractor will bear all associated costs of these changes.

2.06 REQUEST FOR SUPPLEMENTARY INFORMATION

A. Make timely requests of Architect for additional information required in planning and production of Work.

B. File requests in ample time to permit appropriate action by all parties involved and avoid delay in performance of Work.

C. Owner will not bear costs for delays due to Contractor's failure to request information in a timely manner.

2.07 SHOP DRAWINGS

A. Provide newly-prepared information with graphic information at accurate scale (except as otherwise indicated), with name of preparer indicated (firm name). Do not duplicate and submit Architect's construction drawings as shop drawings. Show dimensions and notes which are based on field measurement. Identify materials and products in work shown. Indicate compliance with standards, and special coordination requirements.

1. Contract Document electronic files (including all drawings, specifications, addenda and supplemental information) will not be made available to Bidders or Sub-bidders before the award of a Contract. After the award of the Contract, the General Contractor may make request for release of electronic document files.

B. Shop drawings must bear Contractor's approval stamp. This approval stamp certifies that the Contractor has reviewed the shop drawings, product data, samples or similar submittals for conformance with the Contract Documents. All deviations will be noted in writing and highlighted on the submittal for Architect's review. The Architect is not responsible for errors, omissions or deviations in the shop drawings, product data, samples or similar submittals by the Contractor.

C. Submittals are reviewed by the Architect for design intent only. The Contractor is responsible for verification of dimensional requirements, compliance with contract documents and local codes, quantities and coordination of all affected trades.

D. Under no circumstances shall Architect's review of shop drawings or submittals relieve Contractor from timely, full and proper performance of Work in accordance with the Contract Documents.

2.08 PRODUCT DATA

A. Collect required data into one submittal for each unit of work or system; mark each copy to show which choices and options are applicable to project AND WHICH ARE AVAILABLE FOR SELECTION BY THE ARCHITECT WITHOUT ADDITIONAL COST. NO PAYMENT WILL BE MADE FOR ADDITIONAL COST OF ANY CHOICES OR OPTIONS SUBMITTED BY THE CONTRACTOR FOR SELECTION BY THE ARCHITECT AND NOT CLEARLY SHOWN AS NOT AVAILABLE WITHIN THE CONTRACT.

B. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and special coordination requirements.

C. Maintain one set of product data (for each submittal) at project site, available for reference by Architect and others.

D. Do not submit product data until compliance with requirements of contract documents has been confirmed by Contractor.

E. Installer's Copy: Do not proceed with installation of materials, products or systems until final copy of applicable product data is in possession of installer.

2.09 SAMPLES

A. Submit accurate color and pattern charts or actual material samples to Architect for selection. Refer to pertinent sections of specifications for detailed submittal requirements. Provide units identical with final condition of proposed materials or products for the work. Include "range" samples (not less than 3 units) where unavoidable variations must be expected, and describe or identify variations between units of each set.

B. Make all submissions affecting color selection within sufficient time to allow selection without causing delay in Work.

C. Submit items requiring color selection or verification as <u>one submittal</u> to facilitate coordination of all colors at one time. Interior items may be submitted separately from exterior items.

D. Provide full set of optional samples where Architect's selection is required. <u>DO NOT INCLUDE OPTIONS REQUIRING ADDITIONAL COST.</u>

E. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by Architect. Architect will not "test" samples (except as otherwise indicated) for compliance with other requirements, which are therefore the exclusive responsibility of Contractor.

F. Submit 3 sets of samples in final submittal.
   1. Furnish two sets to Architect and assemble one set on site. When all samples are on site, Owner and Architect are to review. Contractor shall provide job samples indicating finished color selections for any and all items requiring finish color for project.
   2. Quality Control Set: Maintain returned final set of samples at project site, in suitable condition and available for quality control comparisons by Architect and Owner. Written approval from Owner is required before the work is begun for any finish requiring color review.

G. Reusable Samples: Returned samples which are intended or permitted to be incorporated into Work must be in undamaged condition at time of use.

2.10 STRUCTURAL SUBMITTALS

A. Structural submittals include shop drawings, design calculations, diagrams, illustrations, schedules, performance charts, nomenclature charts, samples, brochures and other data prepared by the Contractor or any subcontractor, manufacturer, supplier, fabricator, or distributor and which illustrate some portion of the Project directly related to the structural design of the project.

B. Contractor shall make all submittals in advance of installation or construction to allow sufficient time for review.

C. Work requiring shop drawings, whether called for by the Contract Documents or requested by the Contractor, shall not commence until the submission has been reviewed by the Architect/Structural Engineer. Work may commence if the Contractor verifies the accuracy of the Architect/Structural Engineer's corrections and notations and complies with them without exception and without requesting change in Contract Sum or Contract Time.

PART 3 - EXECUTION

3.01 SUBMITTAL PREPARATION

A. Permanently mark each submittal to identify project, date, Contractor, subcontractor, submittal name and similar information to distinguish it from other submittals. Show Contractor's executed review and approval marking.

B. Indicate project, date, "To:"; "From:"; names of subcontractors, suppliers, manufacturers, required references, category and type of submittal, purpose, description, distribution record and signature of transmitter.

C. Indicate drawing number and specifications section number to which submittal applies.

3.02 ARCHITECTS ACTION ON SUBMITTALS

A. Architect's Submittal Review: Submittal review does not relieve Contractor(s) of compliance with Contract Documents or local codes. Review is only for conformance with the design intent of the Project and compliance with information given in the Contract Documents. The contractor is responsible to coordinate and to confirm all dimensions for use at the site. The contractor is responsible for coordination of the work of all trades.

B. Architect's Action: Where action and return is required or requested, Architect will review each submittal and mark per the following, and where possible return within ten (10) working days of receipt. When a submittal must be coordinated with submittals of other trades, Contractor is responsible for gathering all information and forwarding to Architect as a single submittal.

C. Architect's Response:

1. Final Unrestricted Release: Work may proceed, provided it complies with notations and corrections on submittal and with Contract Documents, when submittal is returned with the following: **Marking: "Reviewed".**
2. Final-But-Restricted Release: Work may proceed, provided it complies with notations and corrections on submittal and with Contract Documents, when submittal is returned with the following: **Marking: "Furnish as Corrected".**
3. Returned for Resubmittal: Do not proceed with work. Revise submittal in accordance with notations thereon, and resubmit without delay to obtain a different action marking. Do not allow submittals with the following marking (or unmarked submittals where a marking is required) to be used in connection with performance of the Work: **Marking: "Revise & Resubmit".**
4. Other Actions: Where submittal is returned **"Rejected"** or **"Submit Specific Item"**, an explanation will be provided.

END OF SECTION

POLK STANLEY WILCOX ARCHITECTS
801 South Spring Street
Little Rock, Arkansas 72201

SUBSTITUTION REQUEST

Project: Hangar 12 Service Center Warehouse Addition Date:
Project No: 699H Contractor:
Contact Person:

Contractor hereby requests consideration of a product substitution as follows:

1. Refer To: Section - _____ and/or Drawing - _____
2. Item Description: _____
3. Proposed Substitution:
   Manufacturer: _____
   Model Number: _____
   Description: _____
4. Reason for Substitution:
   ____ Availability ____ Quality Advantage
   ____ Delivery Schedule ____ Performance Advantage
   ____ Cost Advantage ____ Other: _____
5. Coordination:
   Difference in dimensions between the specified and proposed substitute **(WILL) (WILL NOT)** affect dimensions on drawings and adjacent items.

   Describe the effect of the substitution on work of other trades: _____

   Describe the effect of the substitution on other required new or existing materials including electrical wiring, piping, ductwork, finishes, structure, etc.: _____

   Acceptance of this substitution will cause **(NO CHANGE IN) (A REDUCTION OF_____ DAYS FROM)** the completion date of this project.

   Describe any required architectural or engineering design changes required to accommodate the substitution: _____
6. Differences:
   The proposed substitution **(MEETS) (DOES NOT MEET)** the reference standards (ASTM, AWI, UL, etc.) as specified.

   The proposed substitution **(MEETS) (DOES NOT MEET)** the fire rating classification (class, type, FM, UL, NFPA) as specified.

   The proposed substitution is available in the following **(COMPARABLE) (LIMITED) (ADDITIONAL)** finishes.

   Note: Any additional cost associated with proposed substitute finishes will be absorbed by the contractor if this substitution is approved and implemented.

7. Warranty:
   Specified Warranty Length and Coverage:_____
   Substitute Warranty Length and Coverage (Sample warranty attached):_____
   _____
8. This substitution will result in a cost savings and credit of $_____.
9. The proposed substitute has been used in the following installations (attached):_____
   _____
10. Service and replacement material are available from the following (attached):_____
    _____

By submitting this Request for Substitution, the Contractor accepts the following terms and conditions:

1. The proposed substitution, if accepted, will provide performance equivalent to the material or equipment specified. Should a substitution be accepted and should the substitute material or equipment prove defective or otherwise unsatisfactory for the service intended, the Contractor will replace the material or equipment with the material or equipment specified.
2. If the substitution will affect a correlated function, adjacent construction, or work of other trades or contractors, the necessary changes and modifications to affected work are considered to be part of the substitution and will be accomplished without additional cost to the Owner.
3. In the event that the substitution of materials or equipment necessitates the redrawing, redesign, modification or other change to the Contract Documents, the General Contractor will bear all associated costs of these changes.

Contractor warrants that they have verified and believe this substitute is equal or superior to the specified item in all respects. There will be no additional cost associated with coordinating installation of this substitute. Costs and effects of the substitution, as outlined herein, are certified and complete. Claims for additional costs related to acceptance of this substitution, which may become apparent later, are waived.

Manufacturer's product cut sheets, drawings, samples, data sheets, sample warranties, manufacturer's certification, etc. for the substitute are attached.

Contractor:_____ Date:_____

By:_____

Typed Name:_____

Architect's Action:

Substitution is Accepted:_____

Substitution is Rejected for the following reason(s):_____
_____

By:_____

Typed Name:_____

Date:_____

PART 1 - GENERAL

2.01 CLOSEOUT SUBMITTALS

A. Upon completion of Work and **prior to final payment**, **electronic copies** of the following items must be submitted to Architect:
   1. General Contractors letter of warranty
   2. General Contractors letter stating that all deficiency list items are complete
   3. Lien releases
   4. Consent of Surety to pay final retainage
   5. List of all subcontractors and suppliers, including portions of the work performed, address and telephone number of firm, and a contact name familiar with the project.
   6. Guarantees and Warranties: Two fully executed copies of each guarantee and warranty specified. Note that all guarantees and warranties begin at the date of substantial completion.
   7. Certificates: Fully executed copy of each certificate specified.
      a. Certificate of Occupancy
      b. Final Termite Inspection
      c. Final Plumbing Inspection
      d. Final Electrical Inspection
      e. Certificate of Air Balance
   8. Instructions: Operating, service and maintenance manual or instruction sheet for each item as requested by specifications and required for Owner's use.
   9. Shop Drawings: A complete file of final copies of all shop drawings used in construction of project.
   10. Complete set of all submittals for products used in construction of project.

B. Project Record Drawings: The Contractor shall provide one (1) complete set of project record drawings and electronic copies of scanned images of the drawings.
   1. Cloud and reference each of the following items on the Record Drawings:
      a. written addendum items
      b. Addendum Drawings
      c. Supplemental Drawings
      d. Supplemental Instructions
      e. Change Orders
      f. responses to RFI's
      g. any other deviations from the original drawings that are made in the field
   2. Record final locations of underground lines by depth from finished grade and by accurate horizontal offset distances to permanent surface improvements such as buildings, curbs, edges, or walks.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION

3.01 EXTENDED WARRANTIES

A. The entire project is warranted for a period of one (1) year from the date of substantial completion and several materials and systems require extended warranties. It is the responsibility of the General Contractor to review the Project Manual to determine the term of the extended warranties and provide the extended warranties required.

END OF SECTION

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

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

B. Arkansas Special Inspections Guidelines (SEAoAR SI GL 03 - 01/01/2023) in accordance with 2021 Arkansas Fire Prevention Code (based on 2021 International Building Code).

1.02 SUMMARY

A. This Section includes administrative and procedural requirements required for compliance with the International Building Code, Chapter 17, Structural Tests and Special Inspections.

B. Structural testing and special inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with other construction document requirements.
   1. Specific quality-assurance and -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 construction document requirements.
   3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this section.

C. The Owner will engage one or more qualified Special Inspectors and / or testing agencies to conduct structural tests and special inspections specified in this section and related sections and as maybe specified in other divisions of these specifications.

1.03 DEFINITIONS

A. Approved Agency: An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved by the building official.

B. Construction Documents: Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining a building permit. Construction Documents include all supplemental instructions, sketches, addenda, and revisions to the drawings and specifications issued by the registered design professional beyond those issued for a building permit.

C. Shop Drawings/Submittal Data: Written, graphic and pictorial documents prepared and/or assembled by the Contractor based on the Construction Documents.

D. Structural Observation: Visual observation of the structural system by a representative of the registered design professional's office for general conformance to the approved construction documents. Structural observations are not considered part of the structural tests and special inspections and do not replace inspections and testing by the testing agency or Special Inspector.

E. Special Inspector: A qualified person who demonstrating competence, to the satisfaction of the code enforcement official and registered design professional in responsible charge, for inspection of the particular type of construction or operation requiring special inspection. The Special Inspector shall be a licensed Professional Engineer, Engineering Intern, or a qualified representative from the testing agency who is under supervision of a licensed Professional Engineer.

F. Special Inspection, Continuous: The full-time observation of work requiring special inspection by an approved Special Inspector who is present in the area where the work is being performed.

G. Special Inspection, Periodic: The part-time or intermittent observation of work requiring special inspection by an approved Special Inspector who is present in the area where the work has been or is being performed and at the completion of the work.

H. Testing Agency: A qualified materials testing laboratory under the responsible charge of a licensed Professional Engineer, approved by the code enforcement official and the registered design professional in responsible charge, to measure, examine, test, calibrate, or otherwise determine the characteristics or performance of construction materials and verify confirmation with construction documents.

1.04 QUALITY ASSURANCE

A. Testing Agency Qualifications:
   1. Minimum qualifications of inspection and testing agencies and their personnel shall comply with ASTM E329-03 Standard Specification for Agencies in the Testing and/or Inspection of Materials Used in Construction.
      a. Inspectors and individuals performing tests shall be certified for the work being performed as outlined in the appendix of the ASTM E329. Certification by organizations other than those listed must be submitted to the building official for consideration before proceeding with work.
   2. In addition to these requirements, local jurisdiction may have additional requirements. It is the responsibility of the testing and inspection agencies to meet local requirements and comply with local procedures.

1.05 CONFLICTING REQUIREMENTS, REPORTS, AND TEST RESULTS

A. General: 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 uncertainties and requirements that

are different, but apparently equal, to the registered design professional in responsible charge 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 the registered design profession in responsible charge for a decision before proceeding.

C. The Special Inspector's reports and testing agencies results shall have precedence over reports and test results provided by the Contractor.

D. Where a conflict exists between the construction documents and approved shop drawings/submittal data, the construction documents shall govern unless the shop drawings/submittal data are more restrictive. All conflicts shall be brought to the attention of the registered design professional in responsible charge.

1.06 SUBMITTALS BY SPECIAL INSPECTOR AND/OR TESTING AGENCY

A. Special Inspectors shall keep and distribute records of inspections. The Special Inspector shall furnish inspection reports to the building official, and to the registered design professional in responsible charge, Contractor, Architect, and Owner. Reports shall indicate that work inspected was done in conformance to approved construction documents. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and to the registered design professional in responsible charge prior to the completion of that phase of the work. A final report documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon by the permit applicant and the building official prior to the start of work.

1. Special inspection reports and test results shall include, but not be limited to, the following:
    a. Date of inspection.
    b. Description of inspections or tests performed including location (reference grid lines, floors, elevations, etc.).
    c. Statement noting that the work, material, and/or product conforms or does not conform to the construction document requirements.
        1) Name and signature of Contractor's representative who was notified of work, material, and/or products that do not meet the construction document requirements.
    d. Name and signature of Special Inspector and/or testing agency representative performing the work.

B. Schedule of Non-Compliant Work: Each agent shall maintain a log of work that does not meet the requirements of the construction documents. Include reference to original inspection/test report and subsequent dates of re-inspection/retesting.

C. Reports and tests shall be submitted within 1 week of inspection or test. Schedule of Non-Compliant Work shall be updated daily and submitted at monthly intervals.

D. Final Report of Special Inspections. Submitted by each agent listed in the schedule of Structural Testing and Special Inspections.

PART 2 - PRODUCTS (not used)

PART 3 – EXECUTION

3.1 CONTRACTOR'S RESPONSIBILITY

A. The Contractor shall coordinate the inspection and testing services with the progress of the work. The Contractor shall provide sufficient notice to allow proper scheduling of all personnel. The Contractor shall provide safe access for performing inspection and on site testing.

B. The Contractor shall submit schedules to the Owner, registered design professionals and testing and inspecting agencies. Schedules will note milestones and durations of time for materials requiring structural tests and special inspections.

C. Each Contractor responsible for the construction of a seismic-force-resisting system, designated seismic system, or component listed in the quality assurance plan shall submit a written Contractor's statement of responsibility to the building official and to the Owner prior to the commencement of work on the system or component. The Contractor's statement of responsibility shall contain the following:
   1. Acknowledgment of awareness of the special requirements contained in the quality assurance plan.
   2. Acknowledgment that control will be exercised to obtain conformance with the construction documents approved by the building official.
   3. Procedures for exercising control within the Contractor's organization, the method and frequency of reporting and the distribution of the reports.
   4. Identification and qualifications of the person(s) exercising such control and their position(s) in the organization.

D. Each Contractor responsible for the construction of a main wind force-resisting system or a wind-resisting component listed in the quality assurance plan shall submit a written statement of responsibility to the building official and the Owner prior to the commencement of work on the system or component. The Contractor's statement of responsibility shall contain the following:
   1. Acknowledgment of awareness of the special requirements contained in the quality assurance plan.
   2. Acknowledgment that control will be exercised to obtain conformance with the construction documents approved by the building official.
   3. Procedures for exercising control within the Contractor's organization, the method and frequency of reporting and the distribution of the reports.
   4. Identification and qualifications of the person(s) exercising such control and their position(s) in the organization.

E. The Contractor shall repair and/or replace work that does not meet the requirements of the construction documents.
   1. Contractor shall engage an Engineer/Architect to prepare repair and/or replacement procedures.
   2. Engineer/Architect shall be registered in the state in which the project is located. Engineer shall be acceptable to the registered design professional in responsible charge, code enforcement official, and Owner.
   3. Procedures shall be submitted for review and acceptance by the registered design professional in responsible charge, code enforcement official, and Owner before proceeding with corrective action.

F. The Contractor shall be responsible for costs of:
   1. Re-testing and re-inspection of materials, work, and/or products that do not meet the requirements of the construction documents and shop drawings/submittal data.
   2. Review of proposed repair and/or replacement procedures by the registered design professional in responsible charge and the inspectors and testing agencies.
   3. Repair or replacement of work that does not meet the requirements of the construction documents.

3.2 STRUCTURAL OBSERVATIONS

A. Structural observations may be made periodically as determined by the registered design professional in responsible charge.

3.3 TESTING AND INSPECTION

A. Reference related specifications for the minimum level of inspections and testing. Provide additional inspections and testing as necessary to determine compliance with the construction drawings.

END OF SECTION

PART 1 - GENERAL

1.01 GENERAL SITE REQUIREMENTS

A. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways.

B. Ensure safe passage of persons around areas of construction. Conduct operations to prevent injury to adjacent buildings, structures, facilities and persons.

C. Erect temporary covered passageways as required by authorities having jurisdiction.

D. Provide dustproof partitions if required. If not indicated on the drawings, provide dustproof partitions as directed by the Architect to comply with applicable sections of the Life Safety Code.

E. Provide temporary enclosures at doors and other openings in walls as necessitated by weather conditions. Construct enclosures with fire retardant treated lumber. Tape joints and caulk to prevent dust and debris from migrating beyond construction areas. Maintain enclosures in good repair and remove when no longer needed.

F. Provide interior and exterior shoring, bracing or support as needed to prevent movement, settlement or collapse.

1.02 PROJECT SIGNS

A. General Contractor shall furnish and erect temporary construction sign at job site and remove sign at end of construction period. Paint and letter as directed by Architect to identify project, Owner, Architect and Contractor.

B. Additional signs will be provided by the Architect to be placed as directed. Signs shall be maintained throughout the project.

1.03 JOB OFFICES AND STORAGE

A. Contractor and his subcontractors shall maintain office and storage facilities on site as may be necessary. Locate so as to cause no interference with work to be performed on the site by Owner or with Owner's operations. Consult with Architect regarding locations. Office shall have as a minimum the following items:

1. Complete set of Construction Documents including all addenda and supplemental information.
2. Layout and meeting space for Architects or Owners representative to use when visiting the site.
3. Complete job file with copies of all correspondence concerning the project.

B. Upon completion of project, or as directed by Architect, Contractor shall remove temporary structures and facilities from the site, same to become his property. Leave the premises in condition required by Contract.

1.04 SANITARY ARRANGEMENTS

A. Contractor, at beginning of Work, to provide on premises suitable temporary convenience and enclosure for use of workmen on job. Maintain in sanitary condition and remove at completion of Work or when directed by Architect.

1.05 TEMPORARY UTILITIES FOR CONSTRUCTION

A. The Owner will provide all water, gas and electric service required for construction purposes. Contractor to provide necessary conduit, pipe, fittings, etc.

1.06 TEMPORARY HEATING

A. Provide temporary heating, coverings and enclosures necessary to protect operations and materials against damage by dampness and cold, to dry out work, and facilitate completion of Work.

B. Maintain critical installation temperatures required in separate Sections of the Specifications. Repair or replace at no additional cost to Owner, any materials and work damaged by dampness, insufficient or abnormal heat.

1.07 CONSTRUCTION AIDS

A. Provide and maintain for the duration of construction temporary equipment and apparatus including scaffolds, elevators and hoists, canopies, tarpaulins, barricades, warning signs, steps, ladders, platforms, ramps, chutes, walkways, and other temporary construction aids and miscellaneous facilities as necessary for proper completion of the work; comply with pertinent safety regulations.

1.08 RUBBISH CONTAINERS

A. Provide suitable containers with covers for refuse from meals eaten on job site. Remove refuse from containers at least once in every 72 hour period. Place one container beside each drinking water facility to receive discarded paper cups. Pick up and place bottles, cans, paper and garbage of every description in covered rubbish containers continuously during day.

1.09 TEMPORARY FIRE PROTECTION

A. During construction period, provide and maintain types and forms of temporary fire protection needed to protect facilities against fire losses. Store combustible materials in recognized fire-safe locations and containers.

1.10 SECURITY

A. Provide sufficient control to prevent illegal entry or damage during nights, holidays, or other periods when work is not being executed, and such other controls as required during working hours.

1.11 REMOVAL

A. Maintain construction facilities and temporary controls as long as needed for safe and proper completion of work. Remove temporary facilities and controls as rapidly as progress of work will permit or as directed by Architect.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

PART 1 - GENERAL

1.01 CLEANING AND WASTE REMOVAL

A. Progress Cleaning:
   1. The premises and the job site shall be maintained in a reasonable neat and orderly condition and kept free from accumulations of waste materials and rubbish during the entire construction period. Remove crates, cartons, and other flammable waste materials or trash from the work areas at the end of each working day. Do not allow debris to blow onto adjoining properties. Respond immediately to request from adjoining property owners to remove any debris that does manage to show up on adjoining properties. Collect and remove waste materials, debris, and rubbish from site weekly, daily if necessary and dispose off-site.
   2. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
   3. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

B. Final Cleaning:
   1. Use cleaning materials and agents recommended by manufacturer or fabricator of surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property, or that might damage finished surfaces.
   2. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to condition expected from a commercial building cleaning and maintenance program. Comply with manufacturer's published instructions.
   3. Complete following cleaning operations before requesting inspection for Substantial Completion.
      a. Clean Project Site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste materials, litter and foreign substances. Sweep paved areas broom clean. Remove petro-chemical spills, stains and other foreign deposits. Rake grounds to a smooth even-textured surface.
      b. Remove tools, construction equipment, machinery and surplus material from Project Site.
      c. 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.
      d. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.
      e. Broom clean concrete floors in unoccupied spaces.
      f. Vacuum clean carpet and similar soft surfaces, removing debris and excess nap. Shampoo if required.

g. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped, scratched or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces. Do not use razor blades to clean glass. Any scratches on the glass caused by the cleaning process will be cause for the removal and replacement of the damaged glass at the Contractor's expense.

h. Remove labels that are not permanent labels.

i. Touch-up and otherwise repair and restore marred exposed finishes and surfaces. Replace finishes and surfaces that can not be satisfactorily repaired or restored, or that show evidence of repair or restoration. Do not paint over "UL" and similar labels, including mechanical and electrical name plates.

j. Wipe surfaces of mechanical and electrical equipment, and other similar equipment. Remove excess lubrication, paint and mortar droppings and other foreign substances.

k. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

l. Replace all disposable filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills. Clean ducts, blowers, and coils if units were operated without filters during construction.

m. Clean light fixtures, lamps, globes and reflectors to function with full efficiency. Replace burned out bulbs, and defective and noisy starters in fluorescent and mercury vapor fixtures.

n. Leave Project clean and ready for occupancy.

4. Engage an experienced licensed exterminator to make a final inspection, and rid Project of rodents, insects, and other pests. Comply with regulations of local authorities having jurisdiction.

5. Remove temporary protection and facilities installed during construction to protect previously completed installations during remainder of construction.

6. Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from Project Site and dispose of in accordance with requirements of local authorities having jurisdiction.

   a. Extra materials of value that remain after completion of construction and have become the Owner's property are to be stored as directed by Owner.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

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PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Demolition and removal of selected portions of building or structure.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.

C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.04 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

1.05 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project Site.

1.06 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Storage or sale of removed items or materials on-site is not permitted.

E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
   1. Maintain fire-protection facilities in service during selective demolition operations.

1.07 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION

3.01 EXAMINATION

A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

B. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

C. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs, and preconstruction videotapes.

3.02 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
   1. Comply with requirements for access and protection specified in Section 01 5000 "Temporary Facilities and Controls."

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.03 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
   1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
   2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
   3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
   4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
   5. Dispose of demolished items and materials promptly.

B. Removed and Salvaged Items:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers.
   3. Store items in a secure area until delivery to Owner.
   4. Transport items to Owner's storage area designated by Owner.
   5. Protect items from damage during transport and storage.

C. Removed and Reinstalled Items:
   1. Clean and repair items to functional condition adequate for intended reuse.
   2. Pack or crate items after cleaning and repairing. Identify contents of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition[and cleaned] and reinstalled in their original locations after selective demolition operations are complete.

3.04 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them..
   1. Do not allow demolished materials to accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn demolished materials.

3.05 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION

PART 1 – GENERAL

1.1 RELATED SECTIONS

A. Division 01 - General Requirements
    1. Section 01 74 19 - Construction Waste Management and Disposal
    2. Section 01 35 29 - Health and Safety Procedures
B. Division 02 - Existing Conditions
    1. Section 02 41 00 - Demolition and Structure Moving
C. Division 31 – Earthwork
    1. Section 31 23 00 - Excavation and Fill
D. Division 33 – Utilities
    1. Section 33 05 00 - Common Work Results for Utilities
    2. Section 33 11 00 - Water Utility Distribution Piping
E. Division 02 82 00 - Asbestos Remediation (if applicable)

1.2 REFERENCES, CODES, AND STANDARDS

A. American National Standards Institute (ANSI)
    1. ANSI A10.6 - Safety Requirements for Demolition Operations
B. Occupational Safety and Health Administration (OSHA)
    1. OSHA 29 CFR 1926 Subpart T – Demolition
    2. OSHA 29 CFR 1926 Subpart Z - Toxic and Hazardous Substances
C. Environmental Protection Agency (EPA)
    1. EPA 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants (NESHAP)
D. National Fire Protection Association (NFPA)
    1. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations
E. American Society for Testing and Materials (ASTM)
    1. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C
F. International Code Council (ICC)
    1. International Building Code (IBC)
G. Local and State Codes and Ordinances
    1. Comply with all applicable local and state requirements for demolition and environmental protection.

1.3 SUBMITTALS

A. Demolition Plan

1. Submit a detailed selective demolition plan indicating methods, sequence, equipment, and safety measures.

B. Waste Management Plan
    1. Submit a construction waste management plan including recycling, reuse, and disposal procedures.
C. Permits and Notifications
    1. Provide copies of all required permits, notifications to authorities, utility disconnection approvals, and asbestos abatement certifications if applicable.
D. Schedule
    1. Provide a demolition schedule coordinated with other work on site.

1.4 QUALITY ASSURANCE

A. Qualifications
    1. Demolition Contractor shall have a minimum of five (5) years documented experience in selective demolition of similar scope and complexity.
    2. Contractor personnel shall be trained in OSHA demolition safety procedures and hazardous materials handling.
B. Pre-demolition Inspection
    1. Conduct a thorough site inspection to identify hazardous materials, structural elements, and utilities prior to demolition.
    2. Perform and document pre-demolition photographic survey of affected areas.
C. Testing and Monitoring
    1. Perform air monitoring for dust, asbestos fibers, and other hazardous materials as required by OSHA and EPA during demolition.
    2. Conduct structural monitoring if required to ensure adjacent structures are not adversely affected.
D. Safety
    1. Comply with all OSHA safety requirements including use of personal protective equipment (PPE), barricades, signage, and emergency procedures.
    2. Provide dust control measures such as water spray, barriers, and air filtration as needed.

1.5 WARRANTIES

A. Demolition Work Warranty
    1. Provide a warranty for demolition work covering workmanship and compliance with specified requirements for a period of one (1) year from date of substantial completion.
B. Environmental Compliance Warranty

1. Warrant that all demolition activities comply with federal, state, and local environmental regulations including proper handling and disposal of hazardous materials.

PART 2 – PRODUCTS

2.1 EQUIPMENT

A. Select equipment appropriate to the scale and type of selective demolition including but not limited to excavators with hydraulic shears, breakers, hand tools, and vacuum systems for dust control.
B. Provide shoring, bracing, and temporary support as required to maintain stability of remaining structures.

2.2 MATERIALS FOR PROTECTION

A. Temporary Barriers
    1. Use fencing, barricades, and dust screens to protect adjacent areas and control access.
B. Dust Control Materials
    1. Water sprays, misting systems, and dust suppressants approved for environmental compliance.
C. Salvage Containers
    1. Provide containers or bins for segregated storage of salvaged materials, recyclable materials, and waste.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify locations of utilities prior to commencement of demolition.
B. Confirm that all hazardous materials have been removed or abated as required prior to demolition.
C. Notify Architect and Owner of any discrepancies or unexpected hazardous conditions before proceeding.

3.2 PREPARATION

A. Erect temporary barriers, fencing, and signage to restrict unauthorized access.
B. Disconnect and cap utilities in coordination with utility companies.
C. Implement dust control measures and erosion control as per approved plans.

3.3 SELECTIVE DEMOLITION PROCEDURES

A. Demolish identified site elements including pavement, curbs, sidewalks, structures, foundations, and utilities as indicated in contract documents.
B. Perform demolition in a manner to prevent damage to adjacent structures and utilities to remain.
C. Salvage materials as specified for reuse or recycling; handle and store salvaged materials to prevent contamination or damage.
D. Remove and legally dispose of all demolition debris in accordance with federal, state, and local regulations.
E. Control dust, noise, vibration, and other impacts during demolition operations.

3.4 SITE CLEANUP

A. Remove all demolition equipment, debris, and temporary protection upon completion.
B. Leave site in clean and safe condition ready for subsequent construction activities.
C. Conduct final inspection with Owner's representative to verify completion.

3.5 DISPOSAL

A. Segregate waste streams including concrete, metals, wood, asphalt, and hazardous materials.
B. Transport and dispose of materials at approved recycling or landfill facilities.
C. Provide manifests, receipts, or other documentation of disposal and recycling for record.

3.6 PROTECTION

A. Protect existing site features and utilities to remain from damage during demolition.
B. Immediately repair any damage caused by demolition activities at no cost to Owner.

3.7 FIELD QUALITY CONTROL

A. Continuous monitoring of dust, noise, and vibration levels during demolition.
B. Periodic inspection of temporary supports and barriers.
C. Document and report any non-compliance or incidents to Architect and Owner promptly.

END OF SECTION

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes
   1. Removal of existing construction materials as indicated.
   2. Salvage and protection of designated materials for reuse or recycling.
   3. Transportation and off-site disposal of demolition debris.
   4. Site cleanup related to removal and salvage operations.

B. Related Sections
   1. Division 01 – General Requirements.
   2. Section 01 35 29 – Health and Safety Procedures.
   3. Section 01 74 19 – Construction Waste Management and Disposal.
   4. Section 31 20 00 – Earth Moving.
   5. Section 02 41 19 – Selective Demolition.
   6. Section 02 41 13 – Demolition of Structures and Portions of Structures.
   7. Section 01 81 13 – Sustainable Design Requirements.
   8. Section 01 57 19 – Temporary Environmental Controls.

1.2 REFERENCES

A. Codes and Standards
   1. International Building Code (IBC), latest edition.
   2. Occupational Safety and Health Administration (OSHA) Standards, 29 CFR Part 1926 – Safety and Health Regulations for Construction.
   3. EPA – Resource Conservation and Recovery Act (RCRA).
   4. ANSI A10.6 – Safety Requirements for Demolition Operations.
   5. ASTM E136 – Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.
   6. ASTM D6051 – Standard Guide for Salvaging and Reuse of Construction Materials.
   7. NFPA 241 – Standard for Safeguarding Construction, Alteration, and Demolition Operations.
   8. ANSI Z117.1 – Safety Requirements for Confined Spaces.
   9. ISO 14001 – Environmental Management Systems – Requirements with Guidance for Use.
   10. ASTM E329 – Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection.

1.3 DEFINITIONS

A. Removal: The process of carefully taking out existing materials, components, or assemblies from a building or site.
B. Salvage: The process of recovering materials or components for reuse, resale, recycling, or donation.
C. Demolition Debris: Materials resulting from removal operations that are not salvaged and require disposal.
D. Hazardous Materials: Materials classified as hazardous by federal, state, or local regulations requiring special handling and disposal.

1.4 QUALITY ASSURANCE

A. Regulatory Compliance
    1. Perform removal and salvage operations in accordance with applicable federal, state, and local codes and regulations.
    2. Obtain all required permits and approvals prior to commencement.
B. Qualifications
    1. Engage a Contractor experienced in selective removal and salvage operations, with at least five years documented experience.
    2. Utilize personnel trained in handling hazardous materials and certified in applicable safety standards.
C. Inspection and Testing
    1. Conduct pre-removal condition survey documenting existing materials and conditions.
    2. Inspect salvaged materials for damage, contamination, or degradation prior to storage or reuse.
D. Safety
    1. Comply with OSHA requirements for demolition safety, personal protective equipment, and confined space entry.
    2. Maintain fire protection measures per NFPA 241 during removal operations.
    3. Environmental Controls
    4. Implement dust suppression, noise control, and erosion prevention measures during removal and salvage.
    5. Manage stormwater runoff to prevent contamination from debris or hazardous materials.

1.5 SUBMITTALS

A. Waste Management Plan
    1. Submit a detailed Construction Waste Management Plan including waste reduction goals, disposal methods, and diversion strategies.
B. Salvage Plan
    1. Submit a Salvage Plan identifying materials to be salvaged, handling procedures, storage locations, and responsible personnel.

C. Disposal Documentation
    1. Provide copies of manifests, receipts, or certifications for all off-site disposal or recycling activities.
D. Safety Plan
    1. Submit a project-specific safety plan addressing demolition hazards and worker protection.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Salvaged Materials
    1. Protect salvaged materials from damage, moisture, contamination, and deterioration.
    2. Store materials in designated areas with clear identification and access controls.
B. Hazardous Materials
    1. Handle and store hazardous materials in accordance with applicable regulations and safety data sheets.

1.7 WARRANTY

A. Removal Work Warranty
    1. Contractor shall warrant that removal and salvage work is performed in accordance with contract documents, applicable codes, and industry best practices.
    2. Warranty period shall be one year from date of Substantial Completion.
B. Salvaged Materials Warranty
    1. Contractor shall warrant that salvaged materials meet specified quality and condition requirements at time of delivery or storage.
    2. Warranty shall cover material integrity for reuse as specified.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Salvaged Materials
    1. Materials designated for salvage may include:
        a) Structural steel and metal components.
        b) Dimensional lumber, millwork, and wood flooring.
        c) Masonry units and stone.
        d) Architectural fixtures and hardware.
        e) Doors, windows, and glazing.
        f) Mechanical, electrical, and plumbing components as indicated.
    2. Materials must be free of hazardous contaminants and structurally sound for reuse.

B. Temporary Protection Materials
    1. Use protective coverings, barriers, and supports suitable to protect salvaged materials during removal and storage.
C. Disposal Containers
    1. Provide containers or bins compliant with environmental regulations for segregation and collection of debris, recyclable materials, and hazardous waste.

PART 3 – EXECUTION

3.1 PREPARATION

A. Site Assessment
    1. Survey and document existing conditions prior to removal.
    2. Identify all hazardous materials requiring specialized handling.
B. Notification
    1. Notify Owner and Authorities of removal schedule and activities as required.
C. Utilities
    1. Disconnect or cap utilities as necessary to perform removal safely.

3.2 REMOVAL PROCEDURES

A. General
    1. Perform removal work in a manner to prevent damage to elements designated to remain.
    2. Use equipment and techniques appropriate for the materials and site conditions.
B. Salvage Operations
    1. Remove materials identified for salvage carefully to maintain integrity.
    2. Clean and prepare salvaged materials for storage or transport.
    3. Clearly label and inventory salvaged materials.
C. Hazardous Materials
    1. Isolate and remove hazardous materials in compliance with EPA and OSHA regulations.
    2. Dispose of hazardous waste through licensed handlers.
D. Demolition Debris
    1. Segregate debris into recyclable, reusable, and landfill categories.
    2. Remove debris regularly to maintain a safe and clean work area.

3.3 HANDLING AND STORAGE

A. Protection
    1. Protect salvaged materials from weather, contamination, and damage during storage.
    2. Store materials on elevated platforms or pallets where applicable.

B. Inventory Control
    1. Maintain updated inventory logs of stored salvaged materials.
    2. Coordinate storage locations with Owner or designated party.

3.4 TRANSPORTATION AND DISPOSAL

A. Transportation
    1. Transport salvaged materials and debris in covered vehicles where required to prevent spillage and contamination.
B. Disposal
    1. Dispose of non-salvageable materials at approved landfills or recycling centers.
    2. Provide documentation of disposal consistent with regulatory requirements.

3.5 SITE CLEANUP

A. Maintain work area free of debris and hazards at all times.
B. Remove all temporary protection and barriers upon completion of removal work.
C. Restore site to condition acceptable to Owner and in compliance with environmental regulations.

3.6 RECORD DOCUMENTATION

A. Maintain records of removal and salvage operations including inventories, disposal receipts, and compliance documentation.
B. Submit final reports to Owner as part of project closeout documentation.

END OF SECTION

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PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Form cast-in-place concrete required and subsequently remove forms except as otherwise specified.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Qualifications of Workmen: Provide foreman at all times during execution of this portion of the Work, thoroughly familiar with type materials being installed, referenced standards, and requirements of this work, and who shall direct work performed under this Section.

B. Codes and Standards:
   1. In addition to complying with pertinent codes and regulations, comply with pertinent recommendations contained in "Recommended Practice for Concrete Formwork", publication ACI 347 of the American Concrete Institute.
   2. Where provisions of pertinent codes and standards conflict with requirements of this Section more stringent provisions govern.

PART 2 - PRODUCTS

2.01 FORM MATERIALS - GENERAL

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
   1. Plywood, metal, or other approved panel materials.
   2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
      a. High-density overlay, Class 1 or better.

b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
c. Structural 1, B-B or better; mill oiled and edge sealed.
d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.

D. Form Release: Provide Clean Strip J1A by Dayton Superior, Darragh Diamond-Kote Form Release, or approved equal.

2.02 TIES AND SPREADERS

A. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
2. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.03 UNDER SLAB VAPOR BARRIER

A. Vapor Barrier must have the following qualities:
1. Permeance as tested after mandatory conditioning (ASTM E 1745, Paragraphs 7.1.2 - 7.1.5): not more than 0.01 Perms [grains/(ft^2 *hr * in.Hg)] per ASTM F 1249 or ASTM E 96.
2. ASTM E 1745 Class A (Plastics)

B. Vapor Barrier:
1. Stego Wrap 15 mil by Stego Industries, 877-464-7834.
2. Perminator 15 mil by W. R. Meadows, 800-342-5976.
3. Fortifiber Building Systems Group Moist Stop Ultra 15 mil

C. Accessories:
1. Seam Tape:
a. Water Vapor Transmission Rate: ASTM E 96, 0.3 perms or lower
b. Stego Tape by Stego Industries, 877-464-7834, or approved equal.
2. Mastic:
a. Water Vapor Transmission Rate: ASTM E 96, 0.3 perms or lower
b. Stego Mastic, or approved equal.

3. Pipe Boots: Construct pipe boots from vapor barrier material, pressure sensitive tape and/or mastic per manufacturer's instructions.
4. Perimeter/edge seal:
   a. Stego Crete Claw
   b. Stego Term Bar by Stego Industries LLC, (877) 464-7834
   c. StegoTack Tape (double-sided sealant tape)

D. Penetration Prevention: Beast Foot

E. Vapor Barrier-Safe Screed System: Beast Screed

2.04 WATERSTOPS

A. Provide Waterstop-RX by CETCO, 1-800-527-9948, or approved equal at cold poured foundation joints.

PART 3 - EXECUTION

3.01 CONSTRUCTION OF FORMS

A. General: Construct substantial, sufficiently tight forms to prevent fins and leakage of mortar, and able to withstand deflection when filled with wet concrete.

B. Layout:
1. Form cast-in-place concrete to shapes, sizes, lines, and dimensions required.
2. Exercise particular care in form layout to avoid necessity for cutting of concrete after placement.
3. Make proper provision for inserts, sleeves, pipes, openings, offsets, recesses, anchorage, blocking, and related features as required.

C. Forms for footings and related below grade concrete may be omitted when soil and workmanship permit accurate excavation to size and where omission is approved by Architect.

D. Removal of forms: Time for removing forms is subject to weather conditions after concrete is poured. Remove form work in manner to insure complete safety of structure. Do not place building materials on slabs until they are strong enough to carry the imposed load. Contractor shall decide when to remove forms and accept full responsibility for their removal.

3.02 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.

2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
5. Space vertical joints in walls **as indicated**. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least **one-fourth** of concrete thickness as follows:
1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated.
2. Terminate full-width joint-filler strips not less than 1/2 inch (13 mm) or more than 1 inch (25 mm) below finished concrete surface where joint sealants, specified in Section 079200 "Joint Sealants," are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.03 CHAMFERED CORNERS

A. Chamfer corners of rectangular concrete members formed with wood forms except where flush with adjacent concrete or masonry, or where covered with other materials.

3.04 INSTALLING VAPOR BARRIER

A. Provide vapor barrier under interior concrete floor slabs on grade.

B. Ensure that subsoil is approved by architect or geotechnical firm. Level, tamp or roll aggregate drainage fill.

C. Install vapor barrier in accordance with manufacturer's instructions and ASTM E 1643-98.
   1. Unroll Vapor Barrier/Retarder with the longest dimension parallel with the direction of the pour.
   2. Lap Vapor Barrier/Retarder over footings and seal to foundation walls.
   3. Overlap joints 6 inches and seal with manufacturer's tape.
   4. Seal all penetrations (including pipes) per manufacturer's instructions.
   5. No penetration of the vapor barrier is allowed except for reinforcing steel and permanent utilities.
   6. Repair damaged areas by cutting patches of vapor barrier, overlapping damaged area 6 inches and taping all four sides.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish and install reinforcement and associated items required for cast-in-place concrete.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.
   1. Furnish Shop Drawings for review by Architect, on reinforcing steel including special details, bending diagrams, schedules, bar lists, placing diagrams, and accessories. In addition to provisions in General Conditions, submit reinforcing Shop Drawings prepared by or under supervision of registered professional engineer. Reproduction (in any form) of Contract Drawings are not to be used for Shop Drawings. Submit related shop drawings together. Partial submittals will not be accepted.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Qualifications of Workmen: Provide foreman at all times during execution of this portion of the Work, thoroughly familiar with type materials being installed, referenced standards, and requirements of this work, and who shall direct work performed under this Section.

B. Codes and Standards:
   1. In addition to complying with pertinent codes and regulations, comply with pertinent recommendations contained in "Manual of Standard Practice for Detailing Reinforced Concrete Structures", publication ACI 315 of the American Concrete Institute.
   2. Where provisions of pertinent codes and standards conflict with requirements of this Section more stringent provisions govern.

PART 2 - PRODUCTS

2.01 CONCRETE REINFORCEMENT

A. Concrete Reinforcement Materials: New, free from rust, and complying with following reference standards:
   1. Bars for Reinforcement: "Specifications for Deformed Billet-Steel Bars for Concrete Reinforcement", ASTM A-615, grade 60 unless otherwise shown.
   2. Wire Fabric: "Specifications for Wire Fabric for Concrete Reinforcement", ASTM A1064.
   3. Supports, Spacers, and Chairs: Types which will hold reinforcement in position shown in accordance with requirements of ACI 318 except as specified.

2.02 TENSION SPLICE DEVICES

A. ZAP Screwlok by Bar Splice Products, Inc.

B. Quick-Wedge by Erico Products, Inc.

C. Lenton Taper Rebar Splice by Erico Products, Inc.

2.03 OTHER MATERIALS

A. Provide metal accessories, including spacers, chairs, ties, and devices necessary for properly assembling, placing, spacing, and supporting reinforcement including welded wire fabric as shown on drawings. Provide materials, not specifically described but required for complete and proper installation of concrete reinforcement, as selected by Contractor subject to approval of Architect.

PART 3 - EXECUTION

3.01 SITE CONDITIONS

A. Inspection:
   1. Carefully inspect installed work of other trades and verify work is complete to point where this installation may properly commence.
   2. Verify that concrete reinforcement may be installed to comply with pertinent codes and regulations, reviewed Shop Drawings, and original design.

B. Discrepancies:
   1. In event of discrepancy, immediately notify Architect.
   2. Do not proceed with installation in areas of discrepancy until discrepancies have been fully resolved.

3.02 BENDING

A. General: Fabricate reinforcement to comply with reviewed Shop Drawings. Do not use bars with kinks and bends not shown on Drawings or on reviewed Shop Drawings. Do not bend and straighten steel in manner that will injure material.

B. Assembly: Tack-welding not acceptable for assembly of reinforcement without specific approval of the Structural Engineer. When permitted by Engineer all welding shall conform to reinforcing steel welding code (AWS D.12.1) of the American Welding Society.

3.03 PLACING OF REINFORCEMENT

A. Placing:
   1. Support and wire together reinforcing bars to prevent displacement by construction loads and placing of concrete. Provide metal or plastic coated bar chairs and spacers. Provide galvanized, stainless steel or plastic coated accessories where concrete surface will be exposed to weather in finished structure and where rust would impair architectural finishes. Do not support bars on concrete or masonry brick bats.
   2. Lap welded wire fabric minimum of 12". Support mesh in final position in all slabs. Lifting of mesh into final position is not permitted.
   3. Do not bend bars after embedded in concrete.

B. Cleaning Reinforcement: Remove loose, flaky rust, mill scale, mud, oil, and related coatings that will destroy and reduce bond during concrete placement.

C. Splices: Splice where shown on Drawings or reviewed Shop Drawings.

D. Concrete Reinforcement Protection: If not detailed otherwise, where concrete is deposited against ground, reinforcement shall have minimum of 3" concrete between it and the ground. If concrete surfaces after removal of forms are to be in contact with ground or exposed to weather, protect reinforcing with minimum of 2" of concrete for bars larger than No. 5 and 1-1/2" for No. 5 bars and smaller. Provide minimum 3/4" concrete covering for reinforcing in slabs and 1-1/2" minimum cover in beams at surfaces not exposed directly to ground or weather.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Cast-in-place, reinforced concrete required.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.
   1. Design Mix: Prior to placement of concrete, submit concrete mix designs proposed by the concrete supplier for class of concrete, including recent test results substantiating the quality of concrete produced by each mix.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Qualifications of Workmen:
   1. Provide foreman at all times during execution of this portion of the Work, thoroughly trained and experienced in placing type concrete specified and who shall direct work performed under this Section.
   2. Finishing of Exposed Surfaces of Concrete: Use thoroughly trained and experienced journeyman concrete finishers.

B. Codes and Standards:
   1. In addition to complying with pertinent codes and regulations, comply with pertinent recommendations of "Building Code Requirements for Reinforced Concrete", publication ACI 318 of latest issue of the American Concrete Institute.
   2. American Concrete Institute: ACI 302, ACI 305 and ACI 306
   3. Where provisions of pertinent codes and standards conflict with requirements of this Section more stringent provisions govern.

1.05 LABORATORY TESTING

A. All required testing will be performed by testing laboratory selected by Owner. Refer to Section 01 4510.

B. Contractor shall submit certified laboratory test reports to Architect for review.

C. Testing Procedures:

1. Material Testing: Laboratory to re-check at plant materials as often as necessary to produce concrete of specified strength and consistency including:
   (a) Fine aggregate.
   (b) Coarse aggregate.
   (c) Cast-in-place concrete.
2. Concrete Slump: As specified.
3. Quality Control: As work progresses testing laboratory personnel shall conduct tests of concrete in accordance with following procedures:
   (a) Secure composite samples from the same batch complying with ASTM C 172.
   (b) Perform one (1) slump test for each set of strength test cylinders complying with ASTM C 143.
   (c) Make one (1) strength test (4 specimens) for each 50 cubic yards and at least one (1) set for each day's pour.
   (d) Mold four (4) strength test specimens from each sample complying with ASTM C 31 and protect and cure under standard moisture and temperature conditions in accordance with Section 7 of above ASTM method.
   (e) Test two (2) specimens at seven (7) days complying with ASTM C 39. Test (3) specimens at 28 days. Hold the remaining specimens for an additional ninety (90) days in case future testing is required. Average strength of (3) three specimens provides a test result for basis of acceptance or rejection of concrete. If tested strength falls below strength specified at twenty-eight (28) days, Architect has the right to order the removal and replacement of defective concrete at Contractor's expense. If Contractor wishes to obtain test cores from in-place concrete, cost of coring, testing and patching will be paid by Contractor.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Portland Cement: Conform to ASTM "Standard Specifications for Portland Cement", C150, Type I. Use one brand of cement. Mix shall contain at least 470 lb. of Portland Cement per cubic yard of concrete.

B. Aggregates: Conform to ASTM "Standard Specifications for Concrete Aggregates", C33. Provide aggregate of natural sand and gravel or prepared from stone or gravel, free from adherent coatings. Maximum size of pieces 1", except for footings and foundation walls which may be 1-1/2" maximum size. Aggregate gradation size No.57.

C. Water: Clean and free from injurious amounts of oils, acids, alkalis, organic materials, and deleterious substances. **Nonpotable water will not be used in concrete mixing.**

D. Fly Ash: Type C. Not to exceed 20% of total mix. Do not use in cold weather conditions below 60 degrees F.

E. Air-Entraining Admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures.

F. Water-Reducing Admixture: ASTM C494, Type A.

G. High-Range Water-Reducing Admixture (Super Plasticizer): ASTM C494, Type F or Type G. The admixture shall not contain more than 0.05 percent Chloride ions.

2.02 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Footings: Proportion normal-weight concrete mixture as follows:
   1. Minimum Compressive Strength: 3,000 PSI at 28 days.
   2. Maximum Water-Cementitious Materials Ratio: 0.53.
   3. Slump Limit: 6 inches for concrete with verified slump of 2 to 4 inches before adding water-reducing admixture, plus or minus 1 inch.
   4. Air Content: 5 percent, plus or minus 1.5 percent at point of delivery.

B. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:
   1. Minimum Compressive Strength: 4,000 PSI at 28 days.
   2. Maximum Water-Cementitious Materials Ratio: 0.44.
   3. Slump Limit: 4 inches, plus or minus 1 inch.
   4. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.

C. Elevated Slabs: Proportion normal-weight concrete mixture as follows:
   1. Minimum Compressive Strength: 4,000 psi at 28 days.
   2. Maximum Water-Cementitious Materials Ratio: 0.44.
   3. Slump Limit: 4 inches, plus or minus 1 inch.
   4. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.

2.03 GROUT

A. Non-shrink, Non-metallic Grout: Darragh Company Non-Shrink Grout, or approved equal.

B. Grout shall be factory premixed and shall conform to ASTM C1107. In addition, the grout manufacturer shall furnish test data from an independent laboratory indication that the grout, when laced at a fluid consistency, shall achieve 95% bearing under a 4'x4' base plate.
   1. Where high fluidity and/or increased placing time are required, use high flow grout. In addition, the grout manufacturer shall furnish test data from an independent laboratory indicating that the grout, when placed at a fluid consistency, shall achieve 95% bearing under an 18"x36" base plate.

2.04 CONCRETE FLOOR SEALER

A. Typical: Furnish and apply to concrete surfaces shown on finish schedule as "Sealed Concrete":
   1. Eagle Natural Seal Penetrating concrete sealer by Eagle I.F.P. Company, P.O. Box

100431, Nashville, TN 37224, 615-872-2710

2. Apply per manufacturers recommendations.
3. Minimum of two (2) applications are required.

B. Epoxy Paint EP-1At Toilet Rooms: SW ARMORSEAL Rexthane I, Gloss, Custom Color "Cover Up That Yellow"

GIC Colorant OZ	32	64	128
Black	10	1	
Yellow	2		1

PART 3 - EXECUTION

3.01 MIXING AND PLACING CONCRETE

A. Preparation: Clean equipment for transporting concrete. Remove debris, water, and ice from places to be occupied by concrete. Remove laitance and unsound material from hardened concrete before additional concrete is added.

B. Mixing: Ready-mixed concrete, mixed and delivered in accordance with following requirements only of ASTM C 94.

1. Tolerances in Slump,
2. Measuring Materials,
3. Batching Plant,
4. Mixers and Agitators,
5. Mixing and Delivery,
6. Use of Non-Agitating Equipment
7. Inspection.

C. Conveying: Convey concrete from mixer to place of deposit by methods that prevent separation and loss of materials.

D. Placing:

1. Deposit as nearly as practicable in final position to avoid segregation due to rehandling and flowing. Place at rate to assure concrete is plastic and flows readily into spaces between bars. Do not use concrete contaminated by foreign material or retempered concrete.
2. When placing is started, carry a continuous operation until placement of panel or section is completed.

E. Hot Weather Concreting: Place, handle, and cure concrete complying with ACI 305.

F. Cold Weather Concreting: Provide adequate equipment for handling concrete materials and protecting concrete during freezing and near freezing weather. Concrete materials, reinforcements, forms, and ground in contact with concrete to be free of frost, snow, and ice. Details of approved procedures are available in ACI 306. Contractor to keep accurate thermometer on job where the work is proceeding.

3.02 PROTECTION OF ADJACENT SURFACES

A. Contractor responsible for any work soiled and stained by dripping cement, water, or concrete. Protect same with tarpaulin or similar devices while pouring concrete.

3.03 CONSOLIDATION

A. Consolidate concrete by vibration, spading, rodding, or forking. Work around reinforcement, embedded items and into corner of forms. Over-vibrating and use of vibrators to transport concrete within forms not allowed. When consolidating by vibration, keep spare vibrator on job site during concrete placing. Use vibrators of length to extend within 6 inches of bottom of freshly poured concrete, vibrator being raised with each succeeding pour.

3.04 CONCRETE CURING

A. Curing Period: Cure concrete for minimum period of 7 days at a temperature above 50 Deg. F. by one of approved methods listed below. Protect fresh concrete from heavy rain, flowing water, mechanical injury and from injurious action of sun.

B. Water Curing: If cured with water, keep concrete wet by mechanical sprinklers or by any approved method which will keep surface continuously wet.

C. Saturated Sand Curing: Cover finished surfaces with minimum 1" thickness of sand, uniformly distributed and continuously water saturated during entire curing period.

D. Curing Compounds: No chemical curing compounds allowed.

E. Waterproofing Paper or Opaque Polyethylene Film: Conform to ASTM C 171. Cover concrete immediately following final finishing operation. Anchor securely, seal edges or apply in manner to prevent moisture escaping from concrete.

3.05 SLAB FINISHES

A. General: Comply with recommendations in ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish:
   1. While still plastic, texture surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4" in one direction.
   2. Apply scratch finish to surfaces indicated, and to receive mortar setting beds for bonded cementitious floor finishes.

C. Float Finish:
   1. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared, or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven

floats, or by hand-floating if area is small or inaccessible to power units. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture. Uniformly slope surfaces to drains.

2. Apply float finish to slab surfaces indicated to receive trowel finish and surfaces to be covered with membrane or sheet waterproofing and membrane roofing.

D. Trowel Finish:

1. After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance. Grind smooth surface defects which would telegraph through applied floor covering.
2. Apply to surfaces indicated and to floor and slab surfaces exposed-to-view or to received dyed and concrete finish, or to be covered resilient flooring, carpet, tile, paint or other thin film finish coating system.
3. Finish surfaces to the following tolerances, according to ASTM E1155, for a randomly trafficked floor surface.
   a. For Exposed Concrete Floors: Specified overall values of flatness, F(F) 45; and of levelness, F(L) 35.

E. Trowel And Broom Finish: Apply a first trowel finish, stopping after second troweling, to surfaces indicated and where tile is to be installed by thin-set method. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with fine broom.

F. Non-Slip Broom Finish: Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.

1. Apply to cast-in-place concrete steps and concrete fill at steel pan stairs and walks and ramps, except where other finish is indicated.

3.06 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide

or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.

2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

D. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

E. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.07 FLOOR SLOPE TO DRAINS

A. Slope floors to drain outlets. Low spots where pools of water can stand on finished floors are not acceptable. Slope to drains 1/8" per lineal foot unless otherwise marked.

3.08 CONCRETE SEALER APPLICATION

A. New Concrete Surfaces: Allow new poured-in-place concrete to cure a minimum of 28 days at 75°F (24°C). Verify concrete dryness in accordance with ASTM F 1869 “Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride” (moisture vapor transmission should not exceed three pounds per 1,000 square feet in a 24 hour period), F 2170 “Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes” (relative humidity should not exceed 80%), or D 4263 “Standard Test Method for Indicating Moisture in Concrete by

the Plastic Sheet Method" (no moisture present). Note: The testing listed above cannot guarantee avoidance of future moisture related problems particularly with existing concrete slabs. This is especially true if the use of an under slab moisture vapor barrier cannot be confirmed or concrete contamination from oils, chemical spills, unreacted silicates, chlorides or Alkali Silica Reaction (ASR) is suspected.

B. Existing Concrete Surfaces: Prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines. Abrasive blast, shot-blast, water jet or mechanically abrade concrete surfaces to remove laitance, curing compounds, hardeners, sealers and other contaminants and to provide an ICRI-CSP 1-3 surface profile. Large cracks, voids and other surface imperfections should be filled with a recommended filler or surfacer. Note: For moisture content exceeding 3 lbs per 1,000 sq ft or relative humidity in excess of 80%, Series 208 or 241 may be substituted for the primer. Refer to the Series 208 or 241 product data sheet for more information.

C. MIXING: Use a power mixer to stir contents of each container, making sure no pigment remains on the bottom. Slowly mix 2 Parts A component and while under agitation add 1 Part B component. Continue agitation until the two components are thoroughly mixed. Important: Both components (Part A and Part B) must be above 55°F (13°C) prior to mixing. Mixing ratio is two (Part A) to one (Part B) by volume.

D. THINNING: Use clean tap water. Thin up to 5% or 6.4 ounces (190 mL) per gallon.

E. APPLICATION: Brush or roller, squeegee and air or airless spray.
1. Roller: Use a 1/4" or 3/8" synthetic woven nap roller cover.
2. Brush: Use good quality synthetic or nylon bristle brush.
3. Horizontal: Squeegee and backroll. Brush small areas only.
4. Vertical: Roll or spray and backroll. Brush small areas only.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish and erect specified steel framing, column bases, lintels and related structural steel shapes and accessories.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.
   1. Furnish Shop Drawings, for review by Architect, on structural steel showing necessary fabrication details, fittings, fastenings, anchorage and erection details. In addition to provisions of the General Conditions, prepare structural steel Shop Drawings by or under the supervision of a registered professional engineer. Do not use reproductions, in any form, of the Contract Drawings for Shop Drawings. Submit related shop drawings together; partial submittals will not be accepted. Furnish mill certificates on foreign steel proposed for use and not produced within the continental USA. Include with mill certificates certified copies of mill test reports giving names and locations of mills and shops, and chemical analysis and physical properties of steel required for this project.
      a. Contract Document electronic files (including all drawings, specifications, addenda and supplemental information) will not be made available to Bidders or Sub-bidders before the award of a Contract. After the award of the Contract, the General Contractor may make request for release of electronic document files.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Codes and Standards: In addition to complying with pertinent codes and regulations, comply with:
   1. AISC "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings", Latest Edition.
   2. AISC "Code of Standard Practice", Latest Edition.
   3. AISC "Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design", Latest Edition.

4. AISC "Load and Resistance Factor Design Specification for Structural Steel Buildings", Latest Edition.
5. "Code for Welding in Building Construction" of the American Welding Society.
6. "Specifications for Architecturally Exposed Structural Steel" of the American Institute of Steel Construction.
7. Steel Structures Painting Council (SSPC): Painting Manual, Vol. 1, Good Painting Practice. Painting Manual, Vol. 2, Systems and Specifications.
8. Conform to ASTM A 6, "Specification for General Requirements for Rolled Steel Plates, Shapes, Sheet Piling and Bars for Structural Use".

B. Conflicting Requirements: In event of conflict between pertinent codes and regulations and requirements of referenced standards or these specifications, provisions of more stringent govern.

PART 2 - PRODUCTS

2.01 STRUCTURAL STEEL

A. Steel Shapes: Provide structural steel shapes, not otherwise indicated on Structural Drawings using high-strength steel, 50 ksi minimum yield strength, conforming to ASTM A992.

B. Pipe Columns: ASTM A501, Fy = 36 ksi. or A53, Type E, Fy = 35 ksi

C. Rectangular HSS: ASTM A500, Grade C (Fy=50ksi) or have equal yield, ultimate, and weldability properties.

D. Round HSS: ASTM A500, Grade C (Fy=46ksi) or have equal yield, ultimate, and weldability properties.

E. Steel Plates (See Drawings), Channels and Angles: ASTM A36, 36 ksi minimum yield strength, or as indicated.

F. Headed Stud Shear Connectors: ASTM A108, Grade 1015 or 1020, cold finished carbon steel with dimensions complying with AISC Specifications.

G. Furnish structural steel for this Project manufactured within continental limits of the United States of America unless mill certificates are submitted to and approved by Structural Engineer.

2.02 BOLTS AND NUTS

A. High Strength Bolts:
1. Meet ASTM F3125 Grade A325 for high strength bolts.
2. Make bolt holes 1/16 inch larger than nominal bolt diameter.
3. Threads may be included in shear plane of bolts.

B. Machine Bolts: Meet ASTM A307 and A449.

C. Anchor Bolts: Meet ASTM F1554, Grade 36.

D. Bolted Truss Connections: Meet ASTM F3125 Grade A325, slip critical in oversize round holes.

2.03 SHOP PRIMER

A. Lead free, alkyd primer: Manufacturer's standard.

2.04 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/A 123M.

B. Galvanize ALL EXTERIOR EXPOSED structural shapes, lintels, shelf angles and decorative steel components.

PART 3 - EXECUTION

3.01 MEASUREMENT AND DIMENSIONS

A. Contractor to verify measurements and dimensions at job site. Bring any conflict between actual measurements and dimensions shown on the Drawings and any existing condition which will prevent fabrication and erection of steel work as detailed to attention of Architect as soon as they are discovered. Contractor responsible for errors of Shop Drawings, fabrication, correct fitting, and alignment of the structural members. Shop or field splices in standard structural rolled shapes not acceptable unless shown on Contract Drawings.

3.02 WORKMANSHIP

A. Fabricate and erect to comply with the "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" and the "Code of Standard Practice" as adopted by the American Institute of Steel Construction.

3.03 SHOP PRIMER

A. For surface preparation, shop painting and touch-up painting of structural steel shapes, conform to the "Steel Structures Painting Manual", Volumes 1 and 2, of the Steel Structures Painting Council.

3.04 WELDING

A. Shop and field welders continuously employed as welders are acceptable on basis of satisfactory reports dated not more than 2 years prior to award of this Contract. All others must have been requalified in past 6 months complying with AWS D 1.0, Appendix.

3.05 LINTELS

A. Furnish and place all structural steel lintels required for all openings unless concrete lintels or reinforced concrete block lintels are shown on Drawings. Build structural members size marked on Drawings or if not shown as determined by the Structural Engineer. Weld members together with exterior weld being a continuous bead to prevent water from running between the members. Bear on walls 8 inches at each end for openings up to 6'-0" wide and 10 inches for wider openings where not otherwise shown. **ALL STEEL THAT IS EXPOSED TO WEATHER IS TO BE GALVANIZED.**

3.06 HIGH-STRENGTH BOLTING

A. Comply with the "Specification of Structural Joints Using High Strength Bolts" by the Research Council on Structural Connection. All High Strength Bolts shall be pre-tensioned using twist off tension-controlled bolt assemblies.

3.07 ERECTION

A. Use Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings of AISC except as otherwise specified.

B. Sequence: Contractor responsible for erection method and sequence.

C. Progress: As erection progresses, secure the work to take care of dead loads, wind, and erection stresses. Where structural steel is being erected, completely connect the in-place work in the tier below.

D. Alignment: After erection, accurately align and adjust the various members forming parts of a completed frame and structure before being made secure.

E. Tolerances: AISC Code of Standard Practice apply except as otherwise specified.

F. Erection Shims: Sufficient shims may be installed to maintain structure within tolerances. Maximum shim thickness at any one joint no greater than 1/2-inch.

G. Field Assembly: Provide even bearing at field erected column splices and related compression joints which depend upon contact bearing upon completion with respect to the centroid of the contact area. Provide at least 65 percent of the entire contact area in full bearing and the separation of any remaining portion not to exceed 0.02 inches, except locally at toes of flanges where a 50 percent greater separation is permissible; otherwise perform corrective measures.

H. Anchors: Locate and install anchor bolts and anchors, preset by templates, into connecting work. Provide bearing plates under ends of primary structural members resting on masonry and set in full beds of non-shrink grout.

I. Base Plates: Support and align column base plates on steel leveling devices. After support members have been plumbed and properly positioned and anchor nuts tightened, pack solidly entire bearing area under plate with non-shrink grout specified in "Concrete" Division of these Specifications. Leave leveling devices in place and cut off flush with edge of column base plates.

J. All welds, cut edges and areas where primer is missing or damaged is to be cleaned and re-primed.

K. Shear Connectors: Prepare steel surfaces as recommended by Manufacturer of shear connectors. Weld shear connectors in field, spaced as shown, to beams and girders in composite construction. Use automatic end welding of headed stud shear connectors in accordance with manufacturer's printed instructions.

3.08 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections.

B. Bolted Connections: Bolted connections will be inspected according to RCSC's "Specification for Structural Joints Using ASTM F3125 Grade A325 or A490 Bolts"

C. Welded Connections: Field welds will be visually inspected according to AWS D1.1/D1.1M.
   1. In addition to visual inspection, field welds will be tested and inspected according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:
      a. Liquid Penetrant Inspection: ASTM E 165.
      b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
      c. Ultrasonic Inspection: ASTM E 164.
      d. Radiographic Inspection: ASTM E 94.

D. In addition to visual inspection, test and inspect field-welded shear connectors according to requirements in AWS D1.1/D1.1M for stud welding and as follows:
   1. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.
   2. Conduct tests on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1/D1.1M.

E. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

3.09 REPAIRS AND PROTECTION

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780.

B. Touchup Painting: Immediately after erection, clean exposed areas where primer is damaged or missing and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish and erect steel decking specified.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.
   1. Shop Drawings:
      a. Before metal decking is delivered to job site, submit Shop Drawings to Architect for review. Submit related shop drawings together; partial submittals will not be accepted. Do not use reproductions, in any form, of the Contract Drawings for Shop Drawings.
      b. Show sizes, locations, marking of decking units, sizes of holes to be cut in the shop, end closures types and fittings, and methods of securing, anchoring, and attaching to structural members.
      c. Show verification that members used are adequate to carry live and dead loads involved.
      d. Show welds, both shop and field, by currently recommended symbols of the American Welding Society.
      e. Furnish Shop Drawings for Architect review.
      f. Contract Document electronic files (including all drawings, specifications, addenda and supplemental information) will not be made available to Bidders or Sub-bidders before the award of a Contract. After the award of the Contract, the General Contractor may make request for release of electronic document files.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Following specifications and codes govern with modifications specified herein:
   1. American Iron and Steel Institute: Light Gauge Cold-Formed Steel Design Manual.
   2. Steel Deck Institute: Code of Recommended Standard Practice and Basic Design Specifications.
   3. American Welding Society: Code for Welding in Building Construction.

B. Conflicting Requirements: In event of conflict between pertinent codes and regulations, referenced standards requirements and these specifications, provisions of the more stringent govern.

PART 2 - PRODUCTS

2.04 COMPOSITE STEEL FLOOR DECK

A. Composite Deck: Provide 1-1/2" deep, 20 gauge, galvanized steel deck as manufactured by Epic Metals Corp., United Steel Deck, Inc., Vulcraft Div. of Nucor Corp., or approved equal.

B. Composite Floor Unit (combined steel and concrete sections): Capable of supporting concentrated load of 50 p.s.f. occurring anywhere on the slab plus 50% impact in addition to uniform live load of 100 p.s.f. Where more than one-foot width of composite section is required to carry this loading, lateral distribution characteristics must be demonstrated by full scale simple span load tests, or by rational analysis associated with subject tests.

C. Furnish steel floor units with slots, holes, or tabs available in every square foot of underside surface for attaching special adjustable devices or hanger wire size of #8 (.162) minimum for use of other trades.

D. Prepare erection drawings showing type floor and gauge steel being supplied, where it is to be located, necessary fabrication to fit floor into job, and how it coordinates with related parts of the construction. Also show and call for flashing to be supplied by this Contractor.

PART 3 - EXECUTION

3.01 FABRICATION

A. Fabricate metal decking to comply with final Shop Drawings and the referenced standards.

3.02 ERECTION

A. General: Erect metal decking to comply with the Drawings and final Shop Drawings, aligning straight, plumb, and level.

B. Provide sump plates or pans, cant strips, vent clips, and rubber closures required for complete and proper installation.

C. Cut decking to provide openings required by structural design Drawings and holes required for work of other trades.

D. Attach decking by puddle welding to supporting structure. **MECHANICAL FASTENING OR POWDER ACTUATED FASTENING WILL NOT BE ALLOWED**.

E. Touch-up field welds and burned and abraded spots in shop finish using material equivalent to shop finish.

3.03 INSTALLATION OF ACOUSTICAL DECK INSULATION

A. Apply the Acoustic Infill strips directly within the troughs of the metal deck. Ensure that all joints are tightly butted together. Where lengths of Acoustic Infill require to be cut, this is easily facilitated with a sharp knife. Follow with the installation of the appropriate VCL, insulation and waterproofing layer in accordance with the manufacturers' requirements. Day joints must be formed at the conclusion of each section of work to seal exposed edges of the Acoustic Infill.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish and erect steel framing and accessories.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.
   1. Shop Drawings:
      a. Submit shop drawings showing complete details for the fabrication and erection of members.
      b. Submit details, schedules, procedures, and diagrams showing the sequence of erection.
      c. Include all components required for a complete framing system
      d. Provide setting drawings, templates, instructions and directions for installation of anchorage devices.
      e. Submit shop drawings for review prior to starting any work. Work performed prior to shop drawing review is at contractors risk.
      f. Contract Document electronic files (including all drawings, specifications, addenda and supplemental information) will not be made available to Bidders or Sub-bidders before the award of a Contract. After the award of the Contract, the General Contractor may make request for release of electronic document files.
   2. All drawings and calculations shall bear the stamp of a structural engineer licensed in the state in which the project is located.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 REFERENCES

A. American Iron and Steel Institute (AISI)
   1. "Specification for the Design of Cold-Formed Steel Structural Members" .
   2. "Cold-Formed Steel Design Manual" (Latest).

B. American Society of Civil Engineers (ASCE)
   1. ASCE 7-10, "Minimum Design Loads for Buildings and Other Structures"

C. American Society for Testing and Materials (ASTM):
   1. ASTM A446 - Steel Sheet, Zinc-coated (galvanized) by Hot-Dip Process, Structural (Physical) Quality.
   2. ASTM A570 Hot-Rolled Carbon Steel Sheet & Strip, Structural Quality.
   3. ASTM A525 - Sheet Steel, Zinc-Coated (Galvanized) by the Hot-Dip Process, General Requirements.
   4. ASTM A611 - "Standard Specification for Steel, Cold-Rolled Sheet, Carbon, Structural."
   5. ASTM C955 - "Standard Specification for Load Bearing Steel Studs, Runners (Track), Bracing, and Bridging."

D. American Welding Society (AWS):
   1. AWS D1.1 - "Structural Welding Code" and D1.3 - "Specifications for Welding Sheet Steel in Structures."
   2. AWS - Standard Qualification Procedure

E. Metal Lath/Steel Framing Association (ML/SFA) - "Lightweight Steel Framing Systems Manual," Latest Edition.

1.05 PERFORMANCE REQUIREMENTS

A. Contractor is responsible for design, fabrication and erection of steel stud framing to meet the requirements of the latest adopted Local Code.

B. Compute all structural properties in accordance with AISI "Specifications for the Design of Cold Formed Steel Structural Members."

C. Provide weldments as required in accordance with American Welding Society (AWS) AWSD1.3 "Structural Welding Code - Sheet Steel".

1.06 SYSTEM DESCRIPTION

A. Design Requirements: The supplier shall design and/or verify the size and strength of all light gauge cold-formed Metal Framing members and connections in accordance with the ML/SFA Lightweight Steel Framing Systems Manual.
   1. Design shall use the superimposed design loads specified .
   2. Design shall be based upon information shown on the drawings and specified herein.
   3. Maximum deflection of exterior wall systems shall not exceed L/600 for Masonry Veneer and L/360 for EIFS Veneer.
   4. 18 gage studs are the minimum allowed for exterior wall framing or any framing that supports masonry.

B. Design shall conform to: AISI Specification for the Design of Cold-Formed Steel Structural Members. Wall bridging shall be designed to provide resistance to minor axis bending and rotation of wall studs. Designated selected exterior and/or interior walls shall be designed to provide frame stability and lateral load resistance. All connections (member to member, and member to structure) shall be designed and detailed.

C. Qualification of Field Welding: Qualify welding process and welding operators in accordance with AWS AStandard Qualification Procedure.

1.07 DELIVERY AND STORAGE

A. Protect steel studs from rusting and damage.

B. Deliver to project site in manufacturer's unopened containers or bundles, fully identified with name, brand, type and grade.

C. Store off the ground in a dry, ventilated space.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Provide products by Steel Framing Industry Association Members in good standing (listing found at http://www.archtest.com/certification/SFIA_SteelFraming.aspx).

2.02 GENERAL REQUIREMENTS

A. Provide type, size, gauge and physical properties as described by the manufacturers load and height tables and in accordance with the current local building code. All section properties shall be calculated in accordance with the AISI Specification for the Design of Cold-Formed Steel Structural Members (latest edition).

B. Structural calculations specifically related to this project and performed by the manufacturer's structural engineer will indicate depths, gages and spacings of studs required to meet deflection and load bearing requirements.

C. At all instances where radius steel stud and drywall construction is shown on drawings it is intended that the radius be smooth not faceted. Contractor is required to provide smooth face radius by whatever means necessary.

D. Runners: Match studs; type recommended by stud manufacturer for floor and ceiling support of studs, and for vertical abutment of drywall work at other work.

2.03 MATERIALS

A. All structural members shall be formed from steel conforming to ASTM A653-94.

B. All structural members shall be zinc coated in accordance with ASTM A924, G-60 coating.

C. System Components: With each type of steel stud required, utilize runners (tracks), shoes, clips, angles, ties, fasteners, door jamb reinforcers, bridging and accessories for the applications indicated, as needed to product a complete metal stud system.

2.04 FABRICATION

A. General: Framing components may be prefabricated prior to erection. Fabricate components plumb, square, true to line and braced against racking with joints welded. Perform lifting of prefabricated components in a manner to prevent damage or distortion.

B. Fastenings: Attach similar components by welding. Attach dissimilar components by bolting, or screw fasteners, as standard with manufacturer.

C. Cutting of steel framing members may be accomplished with a saw or shear. Torch cutting of load carrying members is not permitted. Cut framing components squarely for attachment to perpendicular members, or as required for an angular fit against abutting members. Hold members positively in place until fastened.

D. Wire tying of framing components is not permitted.

PART 3 - EXECUTION

3.01 ERECTION

A. Anchor tracks securely to supporting structure to transfer imposed loads.

B. Provide complete, uniform and level bearing support for bottom track at each bearing stud location.

C. At intersection and abutting track joints, anchor abutting track pieces securely to a common structural element, or splice them together.

D. Splices in axial loaded studs not permitted.

E. Framed Wall Openings: Include properly designed header and multiple (or heavier) studs at each edge of opening, to compensate for those removed.

F. Diagonal Bracing: Install at wall locations used as "shear walls" for frame stability and to resist wind and lateral loads. Anchor bracing securely for uplift and horizontal shear. Position additional stud(s) as required to resist the vertical component.

G. General:
1. Install continuous tracks sized to match studs. Align tracks accurately to the lay-out at base and top of studs. Secure tracks as recommended by the stud manufacturer for the type of construction involved, except do not exceed 24" o.c. spacing for nail or power-driven fasteners, nor 16" o.c. for other types of attachment. Provide fasteners at corners and end of tracks.
2. Set studs plumb, except as needed for diagonal bracing or required for no-plumb walls or warped surfaces and similar requirements.
3. Where stud system abuts structural columns or walls anchor ends of stiffeners to support structure.

4. Install supplementary framing, blocking and bracing in the metal framing system wherever walls or partitions are indicated to support handrails, bumper guards, wall mounted door stops, fixtures, equipment, services, casework, heavy trim and furnishings, and similar work requiring attachment to the wall or partition. Where type of supplementary support is not otherwise indicated, comply with the stud manufacturer's recommendations and industry standards in each case, considering the weight or loading resulting from the item supported.
5. Secure studs to top and bottom runner tracks by either welding or screw fastening at both inside and outside flanges.
6. Frame wall openings larger than 2'-0" square with double stud at each jamb of frame except where more than 2 are either shown or indicated in manufacturer's instructions. Install runner tracks and jamb studs with stud shoes or by welding, and space jack studs same as full-height studs of the wall. Secure stud system all around to wall opening frame in the manner indicated.
7. Frame both sides of expansion and control joints, as shown for the wall system, with a separate stud and do not bridge and joint with components of the stud system.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Worked covered by this Section includes furnishing of and paying for all materials, labor, services, equipment, licenses, taxes, other items, and appliances for execution, installation and completion of all work specified herein and/or shown on the drawings.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

C. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1.04 QUALITY ASSURANCE

A. Design, engineer, fabricate and install handrails and railing systems to comply with requirements of ASTM E985 for structural performance based on testing performed in accordance with ASTM E 894 and E 935.

B. Structural design, fabrication and assembly shall be in accordance with requirements of NAAMM Metal Stairs Manual, except as otherwise specified or shown.

C. Design stairs to support a live load of 100 pounds per square foot.

D. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
   1. Handrails and Top Rails of Guards:
      a. Uniform load of 50 lbf/ ft. applied in any direction.
      b. Concentrated load of 200 lbf applied in any direction.
      c. Uniform and concentrated loads need not be assumed to act concurrently.
   2. Infill of Guards:
      a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.
      b. Infill load and other loads need not be assumed to act concurrently.

E. ASTM E 985 - For railing - related definitions and structural performance criteria.

F. Shop Drawings and Calculations must be stamped by a professional engineer licensed in the State where the work is located.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Steel Pipe: ASTM A53, Standard Weight.
   1. Shop primed for interior applications

B. Rectangular Tubing: ASTM A500, Grade B or have equal yield, ultimate, and weldability properties.

C. Bars: Hot-rolled, carbon steel complying with ASTM A 29/A 29M, Grade 1010.

D. Plates, Shapes, and Bars: ASTM A 36/A 36M.

E. Steel Grating: Provide steel grating by McNichols Co., 1-800-237-3820, or approved equal:
   1. GRIP STRUT Grating, Galvanized Mill-Galv ASTM A525, 14 Gauge, 4 Diamond, 1-1/2" Channel Depth, Serrated Surface, Plank.

F. Sheet Steel: ASTM A366.

G. Structural Steel: ASTM A36.

2.02 FASTENERS

A. Bolts And Nuts: ASTM A 307, Grade A. High strength bolts; ASTM A 325. Hot-dip galvanize all items in accordance with ASTM A 153.

B. Expansion Bolts Wedge Anchors: Ramset "Trubolt" or Hilti "Kwik Bolt".

C. Expansion Shields: F.S. FF-S-325.

D. Anchor Bolts: Furnish and deliver to site, anchor bolts and other items to be embedded in concrete. Provide necessary shop details and diagrams for concrete forms and, if required, provide templates to insure proper and accurate locations and setting of anchor bolts.

E. Toggle Bolts: Tumble-wing type F.S. FF-B-588 type, class and style as required.

F. Lock Washers: F.S. FF-W-84, helical spring type carbon steel.

2.03 FABRICATION GENERAL

A. Verify dimensions on site prior to shop fabrication.

B. Fit and shop assemble components in largest practical sizes, for delivery to site and installation.

C. Supply components required for secure anchorage of stairs, handrails and railings.

D. Fully weld joints. Grind exposed welds smooth and flush with adjacent surfaces.

E. Make exposed butt joints tight, flush, and hairline.

F. Accurately form components required for anchorage of members to each other and to building structure.

G. Welding:
1. Structural steel, AWS D1.1 and sheet steel, AWS D1.3.
2. Where possible, locate welds on unexposed side.
3. Grind exposed welds smooth and true to contour of welded member. Remove welding splatter.

2.04 STEEL FINISH

A. Lead free, alkyd primer: Manufacturer's standard.

2.05 INDUSTRIAL STAIRS

A. Provide treads, platforms, stringers and other supporting members.

B. Make treads and platforms of steel grating. Fabricate steel grating treads and platforms in accordance with the requirements of NAAMM Metal Bar Grating Manuals.

2.06 STEEL RAILING SYSTEM

A. Rails and Posts: Sizes and shapes as indicated.

B. Mounting on Concrete Floor: Steel sleeves, sized to receive railing post with 1/4 inch clearance.

C. Mounting on Stud Walls: Provide brackets and anchor plates, predrilled to receive bolts.

D. Splice Connectors: Steel threaded collars.

PART 3 - EXECUTION

3.01 PREPARATION

A. Supply items to be embedded in masonry or concrete or placed in partitions with setting templates and erection drawings to approximate sections.

3.02 STAIR INSTALLATION

A. Provide hangers and struts required to support the loads imposed.

B. Perform job site welding and bolting as specified for shop fabrication.

C. Set stairs and other members in position and secure to structure as shown. Install stairs plumb, level and true to line.

3.03 RAILING INSTALLATION

A. Provide standard terminal fittings at ends of posts and rails.

B. Secure brackets, posts and rails to steel by welds, and to masonry or concrete with expansion sleeves and bolts, except secure posts at concrete by setting in sleeves filled with commercial non-shrink grout.

C. Set rails horizontal or parallel to rake of stairs to within 1/8-inch in 12 feet.

D. Set posts plumb and aligned to within 1/8-inch in 12 feet.

3.04 FIELD PRIME PAINTING

A. When installation is complete, clean field welds and surrounding areas to bright metal, and coat with same primer paint used for shop priming.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Includes: Provide rough carpentry, and installation of items specified in other Sections, normally installed by carpenters.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Material Grading: Identify hardboard, particleboard, lumber, and plywood by affixing grademark, stamp, or related identifying marks indicating material grades, rules or standards under which they are produced, and complying with rule or standard under which the material is produced. Use certified inspection agency certified by the Board of Review, American Lumber Standards Committee, to grade lumber species. In lieu of piece grademarking, a certificate of inspection from an agency certified by the Board of Review, American Lumber Standards Committee may be furnished for precut lumber. Applicable grading rules are as follows:

1. Douglas Fir, White Fir, and Cedar: "Standard Grading and Dressing Rules for West Coast Lumber" as published by the West Coast Lumber Inspection Bureau.
2. Ponderosa and Western White Pine: "Grading Rules for Western Lumber", published by the Western Wood Products Association.
3. Southern Yellow Pine: "Standard Grading Rules for Southern Pine Lumber" as published by the Southern Pine Inspection Bureau.

B. Plywood: Conform to U. S. Product Standard PS 1 issued by the National Bureau of Standards. Stamp or brand each standard size panel to show type and grade of panel. When used structurally, plywood to meet performance standards for its type as described in Product Standard PS 1 for Douglas Fir plywood. Furnish material identified as to species, grade, and glue type by an approved agency or independent testing laboratory with appropriate affixed grade-marks on each panel. Provide in addition to above requirements, exterior type plywood for permanently exposed plywood in outdoor applications.

C. Qualifications of Workmen: Provide sufficient skilled workmen and carpenter foreman present at all times during execution of this portion of the Work, thoroughly familiar with type construction involved, materials and techniques specified.

1.05 PRODUCT HANDLING

A. Protection:
1. Store materials to ensure proper ventilation and drainage. Protect against damage and weather.
2. Deliver materials to job site and store, in safe area, out of the way of traffic, and shored off ground surface.
3. Identify framing lumber as to grades and store grades separately.
4. Protect metal products with adequate weatherproof outer wrappings.
5. Use extreme care in off-loading lumber to prevent damage, splitting, and breaking materials.

B. Replacements: In event of damage, immediately make repairs and replacements necessary to approval of Architect at Contractor's expense.

PART 2 - PRODUCTS

2.01 LUMBER

A. Provide lumber for structural carpentry using following species provided grade for each is not lower than minimum shown:
1. Pine, Southern Yellow - SPIB Rules (KD) No. 2 Common
2. Fir, Douglas - WCLIB Rules Standard
3. Fir, White - WCLIB Rules Standard
4. Pine, Western White - WWPA Rules Standard

B. Lumber (except where otherwise noted): Surfaced 4 sides unless, in addition to being dressed, it has been notched, shiplapped, or patterned.

C. Lumber Dimensions: Are nominal.

2.02 PLYWOOD

A. Plywood (not otherwise specified or noted on the Drawings): Comply with DOC PS-1, Exposure 1 (exterior glue), Group 1, Southern pine, C-D grade for concealed applications and B-C grade for exposed “utility” applications.

B. Oriented Strand Board (OSB): Comply with DOC PS-2l, Structural I, Exposure 1.

C. Wall Panels at Data/Electrical Rooms: ¾” B-C, Painted Flat White.

2.03 FIRE-RETARDANT TREATMENT

A. Fire-Retardant Treated Lumber And Plywood

1. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
2. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
3. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
4. Interior Type: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
5. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.
6. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
7. Application: Treat items indicated on Drawings

2.04 HARDWARE

A. Provide rough hardware required for proper installation of carpentry work. Furnish hot-dipped galvanized, nails, spikes, screws, bolts, and similar items using proper types and ample sizes to fasten and hold the various members securely in place.

B. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, fire retardant treated, or in area of high relative humidity, provide fasteners **with hot-dip zinc coating complying with ASTM A 153/A 153M or Type 304 stainless steel**.

PART 3 - EXECUTION

3.01 WORKMANSHIP

A. Carpentry: Produce joints true, tight, and well nailed. Lay out, install and fit wood framing, furring, stripping, and blocking as required by conditions encountered.

B. All Work: Plumb, level, and brace with sufficient nails, spikes, and bolts required to ensure secure attachment and rigidity.

C. Any piece of work or carpentry material with defects that prevent it from serving its intended purpose satisfactorily, including crooked, warped, bowed, or otherwise defective material, even if within the limits of grade specified, will be rejected. Replace with an acceptable piece.

3.02 PLYWOOD INSTALLATION

A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.

B. Sub-flooring: Apply with face grain at right angles to supports with edges 1/8 inch apart at side joints and 1/16 inch apart at end joints. Glue and nail at supported edges 6 inches on center and at intermediate supports 10" o.c. Provide 1/4" clearance at walls. Install each panel with end joints occurring over supports and end joints staggered.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish and install millwork specified.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.
   1. Shop Drawings: Submit newly prepared architectural woodwork Shop Drawings for review by Architect prior to start of fabrication. Do not duplicate Architect's construction drawings. Indicate on shop drawings, dimensions, species, matching of panels, profiles of moldings, assembly details, applied finish, surfacing, built-in hardware, and necessary connections to other trades.
      a. Contract Document electronic files (including all drawings, specifications, addenda and supplemental information) will not be made available to Bidders or Sub-bidders before the award of a Contract. After the award of the Contract, the General Contractor may make request for release of electronic document files.
   2. Brochures: Submit manufacturer's descriptive literature on specialty items not manufactured by the architectural woodworker, as requested by Architect.
   3. Samples to be Submitted:
      a. Each plastic laminate and melamine laminate.
      b. Each type of edge band material.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Standards:
   1. Architectural Woodwork Standards of the Architectural Woodwork Institute (AWI) are referenced in this specification, however, where more stringent requirements are specified, the more stringent shall govern. Any reference to Premium, Custom or Economy in this specification is as defined in latest edition of the AWI "Architectural Woodwork Standards " and as modified in this specification.
   2. Provide Custom grade for any item not given a specific quality grade as defined in latest edition of the AWI "Architectural Woodwork Standards"

B. Competence: Approved woodwork manufacturer, regularly engaged and well experienced in manufacture of fixtures and wood trim and finish of monumental building type, having reputation for doing satisfactory work on time and successfully completing comparable work. Architect reserves the right to approve woodwork manufacturer selected to furnish woodwork.

1.05 FIELD DIMENSIONS

A. Woodwork manufacturer is responsible for details and dimensions not controlled by job conditions. Show on Shop Drawings all required field measurements beyond his control. General Contractor and the woodwork manufacturer shall cooperate to establish and maintain these field dimensions.

1.06 PRODUCT HANDLING

A. Protection: Protect architectural woodwork before, during, and after installation. Protect installed work and materials of other trades.

B. Replacements: In event of damage, immediately make repairs and replacements necessary to approval of Architect and at Contractor's expense.

PART 2 - PRODUCTS

2.01 MATERIALS FOR ARCHITECTURAL WOODWORK

A. Substrate for High Pressure Laminated Plastic Finish:
   1. Typical: ANSI A208 Grade 155 Medium Density Fiberboard (MDF).
   2. At Sinks and Lavatories: All Hardwood veneer core plywood with each veneer layer bonded with exterior glue.

B. Substrate for Thermally Fused "Melamine" Laminate Finish:
   1. ANSI A208 Grade 155 Medium Density Fiberboard (MDF) with factory laminated "Melamine" finish on both sides.
   2. Melamine at Cabinet Interiors to be White.

C. Plam 1: Formica 914-58 Marine Blue-Matte

D. Concealed Counter Support Bracket: A&M Hardware Inc., Flat Bracket Model ECFLAT (length as required) with upper extension “EC”. Finish color to be selected by Architect.

2.02 MILLWORK

A. Fabricate according to AWI Architectural Woodwork Standards for "Custom" Grade, Flush Overlay type.

B. Edge Banding: At HP Laminate and Melamine Laminate millwork, provide 3mm PVC at cabinet top edges and 1mm PVC at door and drawer edges in color to be selected by Architect.

PART 3 - EXECUTION

3.01 FABRICATION

A. Fabricate millwork, ornamental wood, and countertops to comply with reviewed Shop Drawings and referenced standards.

3.02 FINAL INSPECTION

A. General: Prior to final inspection and acceptance by Architect, completely check each installed item and adjust for proper operation.

END OF SECTION

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PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Pre-Engineered Building Insulation for New Construction.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 REFERENCES

A. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. ASTM E 96 - Standard Test Method for Water Vapor Transmission of Materials in Sheet Form (Procedure B).

C. ASTM C 665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

D. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.

E. UL 723 - Tests for Surface Burning Characteristics of Building Materials.

F. ASTM C 1136 - Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation.

1.05 DESIGN REQUIREMENTS

A. Insulating system shall have a continuous vapor barrier inside of building purlins, girts, and insulation to provide complete isolation from inside conditioned air.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing product systems specified in this section with minimum five years documented experience.

B. Installer Qualifications: Company specializing in performing work of this section.

C. Insulation system components to include a ten-year limited material warranty.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store products indoors and protect from moisture, construction traffic, and damage.

1.08 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer: Thermal Design, Inc., Simple Saver System. P.O. Box 468, 601 N. Main Street, Madison, NE 68748. ASD. 800-255-0776

2.02 MATERIALS

A. Simple Saver System consists of Batt Insulation, Roof Insulation, Wall Insulation, Vapor Barrier Liner Fabric, Thermal Breaks, Straps, and other devices and components in a proprietary insulation system as follows:
   1. Batt Insulation: ASTM C 991 Type 1; preformed formaldehyde-free glass fiber batt installed perpendicular to primary roof insulation.
   2. Roof Insulation: Formaldehyde-free fiberglass batt or fiberglass blanket complying with ASTM C 991 Type 1 and ASTM E 84 with a thermal resistance and thickness as follows:
      a. Total system thickness to achieve R-30 minimum.
   3. Wall Insulation: Formaldehyde-free fiberglass blanket or batt complying with ASTM C 991 Type 1, ASTM E 136 and ASTM E 84 with a thermal resistance and thickness as follows:
      a. R-13; 4 inches, minimum
   4. Vapor Barrier Liner Fabric: Syseal® type woven, reinforced, high-density polyethylene yarns coated on both sides with a continuous white or colored polyethylene coatings, as follows:
      a. Product complies with ASTM C 1136, Types I through Type VI.
      b. Perm rating: 0.02 for fabric and for seams in accordance with ASTM E96.

c. Flame/Smoke Properties:
   1) 25/50 in accordance with ASTM E 84.
   2) Self-extinguishes with field test using matches or butane lighter.
d. Ultra violet radiation inhibitor to minimum UVMAX® rating of 8.
e. Size and seaming: Manufactured in large custom pieces by extrusion welding from roll goods, and fabricated to substantially fit defined building area with minimum practicable job site sealing.
f. Provide with factory triple, extrusion welded seams. Stapled seams or heat-melted seams are not acceptable due to degradation of fabric.
g. Factory-folded to allow for rapid installation.
h. Color: White.

5. Vapor Barrier Lap Sealant: Solvent-based, Simple Saver polyethylene fabric adhesive.
6. Vapor Barrier Tape: Double-sided sealant tape 3/4 inch wide by 1/32 inch thick.
7. Vapor Barrier Patch Tape: Single-sided, adhesive backed sealant tape 3 inches wide made from same material as Syseal® type liner fabric.
8. Thermal Breaks:
   a. 3/16 inch thick by 3 inch wide white, closed-cell polyethylene foam with pre-applied adhesive film and peel-off backing.
   b. Polystyrene Snap-R snap-on thermal blocks.
9. Straps:
   a. 100 KSI minimum yield tempered, high-tensile-strength steel.
   b. Size: Not less than 0.020 inch thick by 1 inch by continuous length.
   c. Primed and painted to match specified finish color on the exposed side.
   f. Color: White
10. Fasteners:
   a. For light gage steel: #12 by 3/4 inch plated Tek 2 type screws with sealing washer, painted to match specified color.
   b. For heavy gage steel: #12 by 1-1/2 inch plated Tek 4 type screws with sealing washer, painted to match specified color.
   c. For wood, concrete, other materials: As recommended by manufacturer.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that building structure including all bracing and any concealed building systems are completed and approved prior to installing liner system and insulation in the structure.

B. Correct any unsatisfactory conditions before proceeding.

C. If conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION - GENERAL

A. Install pre-engineered building insulation system in accordance with manufacturer's installation instructions and the approved shop drawings.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Install in exterior spaces without gaps or voids. Do not compress insulation.

D. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

E. Fit insulation tight in spaces and tight to exterior side of the sealed liner fabric and around mechanical and electrical services within plane of insulation.

3.03 ROOF INSULATION INSTALLATION

A. Straps:
   1. Cut straps to length and install in the pattern and spacings indicated on shop drawings.
   2. Tension straps to required value.

B. Vapor Barrier Fabric:
   1. Install vapor barrier fabric in large one-piece custom fabricated pieces to substantially fit defined building areas with minimum practicable job site sealing.
   2. Position pre-folded fabric on the strap platform along one eave purlin.
   3. Clamp the two bottom corners at the eave and also centered on the bay.
   4. Pull the other end of the pleat-folded fabric across the building width on the strap platform, pausing only at the ridge to fasten the straps and fabric in position where plane of roof changes and to release temporary fasteners on the opposite ridge purlins.
   5. Once positioned, install fasteners from the bottom side at each strap/purlins intersection.
   6. Trim edges and seal along the rafters.
   7. All seams must be completely sealed and stapled seams not acceptable.

C. Insulation:
   1. Unpack, and shake to a thickness exceeding the specified thickness.
   2. Ensure that cavities are filled completely with insulation.
   3. Place on the vapor barrier liner fabric without voids or gaps.
   4. Place top layer of insulation over and perpendicular to the purlins without voids or gaps, as roof sheathing is applied.
   5. Place thermal block on top of purlins or bottom of purlins for retrofit work, if no other thermal break exists.
   6. Place new insulation between purlins at the required thickness for the R-value specified.

D. Seal vapor barrier fabric to the wall fabric and elsewhere as required to provide a continuous vapor barrier.

3.04 WALL INSULATION INSTALLATION

A. Insulation:
   1. Install thermal break to exterior surface of girts as wall sheathing is applied.
   2. Install self-sticking foam thermal break to interior surface of girts prior to installation of insulation.
   3. Position and secure Fast-R hangers to girts on the inside face of the wall sheathing.
   4. Cut insulation to required lengths to fit vertically between girts.
   5. Fluff the insulation to the full-specified thickness.
   6. Neatly position in place and secure to Fast-R hangers.
   7. Ensure that cavities are filled completely with insulation.

B. Vapor Barrier Fabric:
   1. Install vapor barrier fabric in large one-piece custom fabricated pieces to substantially fit defined building areas with minimum practicable job site sealing.
   2. Apply the vapor barrier fabric by clamping it in position over eave strap and installing fasteners through the eave strap into each roof strap, permanently clamping the wall fabric between them.
   3. Once in position, draw the vapor barrier fabric down over the column flanges to the base angle and install vertical straps along each column and 5'-0" on center, maximum, fastening to each girt to retain system permanently in place.
   4. All seams must be completely sealed and stapled seams not acceptable.

C. Seal wall fabric to the roof fabric, to the base angle and up the columns to provide a continuous vapor barrier.

3.05 CLEANING

A. Clean dirt or exposed sealant from the exposed vapor barrier fabric.

B. Remove scraps and debris from the site.

3.06 PROTECTION

A. Protect system products until completion of installation.

B. Repair or replace damaged products before completion of insulation system installation.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes the requirements for furnishing and installing firestopping for fire-rated construction. Contractor is responsible for identifying various conditions requiring firestopping material and for submitting proposed UL Tested Assemblies for Architects review.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.
   1. Material Safety Data Sheets: Submit MSDS for each firestop products.
   2. Shop Drawings: Show typical installation details for methods of installation. Indicate which firestop materials will be used where and thickness for different hourly ratings.
   3. Installer Documentation: Submit document from Firestop Manufacturer wherein Manufacturer recognizes, i.e. approves installer for said Manufacturer's Firestop products.
   4. Prepare job mock-up of the material proposed for use in the project as directed by Architect. Approved mock-ups may be left in place as part of the finished project and will constitute the standard for remaining work, including aesthetics.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Firestopping materials shall conform to Flame (F) and Temperature (T) ratings as required by local building code and as tested by nationally accepted test agencies per ASTM E 814 or UL 1479 fire tests. The F rating must be a minimum of one (1) hour but not less than the fire resistance rating of the assembly being penetrated. T rating, when required by code authority, shall be based on measurement of the temperature rise on the penetrating item(s). The fire test shall be conducted with a minimum positive pressure differential of 0.01 inches of water column.

B. Firestopping material shall be asbestos free and free of any PCBs.

C. Do not use any product containing solvents or that requires hazardous waste disposal.

D. Do not use Firestop Products which after curing, dissolve in water.

E. Firestopping shall be performed by a contractor trained or approved by Firestop Manufacturer.

F. 3RD Party Special Inspections per Building Code Section 1704 are required to be provided for work under this Section.

1.05 PRODUCT DELIVERY, STORAGE AND HANDING

A. Deliver material in the manufacturers' original, unopened containers or packages with manufacturer's name, product identification, lot numbers, UL-labels, and mixing and installation instructions, as applicable.

B. Store materials in the original, unopened containers or packages, and under conditions recommended by manufacturers.

C. All Firestop materials shall be installed prior to expiration of shelf life.

1.06 PROJECT CONDITIONS

A. Conform to Manufacturer's printed instructions for installation and when applicable, curing in accordance with temperature and humidity. Conform to ventilation and safety requirements.

1.07 WARRANTY

A. Firestop Contractor shall warranty that firestopping systems used meet firestopping requirements as herein specified.

1.08 SEQUENCING

A. Coordinate this work as required with work of other trades.

B. Firestopping shall precede gypsum board finishing.

1.09 PROTECTION

A. Where firestopping is installed at locations which will remain exposed in the completed work, provide protection as necessary to prevent damage to adjacent surfaces and finishes, and protect as necessary against damage from other construction activities.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Provide materials from one of the following manufacturers:
   1. Hilti
   2. Cafco
   3. STI
   4. 3M
   5. Approved Equal.

2.02 MATERIALS

A. Provide mortars, sealants, caulks, putty, collars, pillows, wrap strips, composite sheets and related materials as required by the UL Design Assembly proposed for each individual application.

B. Accessories:
   1. Forming/Damming Materials: Mineral fiberboard or other type recommended by manufacturer.
   2. Primer, Sealant and Solvent Cleaner: As recommended by manufacturer.

C. Seal all penetration of sound isolating construction with non-hardening material.

2.03 SAFING INSULATION

A. Provide Thermafiber semi-rigid product compling with ASTM C665, Type I; minimum density of 4.0 pcf; passing ASTM E136 for combustion characteristics and with Fire Hazard Classification when tested according to ASTM E84; flame spread of 15 or less, fuel contribution of 0 and smoke development of 0.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions where Firestops are to be installed and notify the architect of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected by the contractor in a manner acceptable to the architect.

B. Verify that environmental conditions are safe and suitable for installation of Firestop product(s).

3.02 CONDITIONS REQUIRING FIRESTOPPING

A. General:
   1. Provide firestopping for conditions specified whether or not firestopping is indicated, and, if indicated, whether such material is designated as insulation, safing, or otherwise.
   2. Insulation types specified in other Sections shall not be installed in lieu of firestopping material specified herein.

B. Building Exterior Perimeters:
   1. Where exterior facing construction is continuous past a structural floor, and a space would otherwise remain open between the inner face of the wall construction and the outer perimeter edge of the structural floor, provide firestopping to equal the fire resistance of the floor assembly. Mineral wool by itself is not an acceptable firestop, neither is mineral wool used with beads of caulking applied along length of mineral wool/curtain wall or mineral wool/floor slab junctures. If mineral wool is part of firestop system, the mineral wool must be completely covered by

appropriate thickness of UL listed Firestop Sealant.

2. Firestopping shall be provided whether or not there are any clips, angles, plates, or other members bridging or interconnecting the facing and floor systems, and whether or not such items are continuous.
3. Where an exterior wall of composite type construction passes a perimeter structural member, such as a girder, beam, or strut, and the finish on the interior wall face does not continue up too close with the underside of the structural floor above, thus interrupting the fire-resistive integrity of the wall system, and a space would otherwise remain open between the interior face of the wall and the lower edge of the structural member, provide firestopping to continuously fill such open space.

C. Interior Walls and Partitions:
1. Where a wall or partition is continuous past a structural floor, such as at stairwells and vertical shafts, and a space would otherwise remain open between the wall face and perimeter edge of the adjoining structural floor, provide firestopping.
2. Provide firestopping whether or not there are any clips, angles, plates, or other members bridging or interconnecting the wall and floor systems, and whether or not such items are continuous.
3. Where the top edge of a fire-rated wall or partition abuts and is at right angle to fluted-type metal decking, and the construction is such that would otherwise leave the flute spaces open, provide firestopping.
4. Where the bottom track or plate of a partition meets the concrete slab provide firestopping sealant.
5. Where the bottom track or plate of a partition meets the top of the concrete block wall below the drywall partition provide firestopping sealant.

D. Penetrations:
1. Penetrations include conduit, cable, wire, pipe, duct, electrical boxes, fire extinguisher cabinets, toilet accessories or other elements which pass through or penetrate one or both sides of a fire rated floor, wall, or partition.
    a. If "5 sided" gypsum board enclosures are omitted where metal electrical back boxes not exceeding 16 square inches occur at one side only of a wall within a single stud cavity; provide fire stopping material described in this Section to completely encompass the back box and its annular space.
2. Except for floors on grade, where a penetration occurs through a structural floor or roof and a space would otherwise remain open between the surfaces of the penetration and the edge of the adjoining structural floor or roof, provide firestopping to fill such spaces in accordance with ASTM E 814.
3. Where penetrations occur at fire-rated walls or partitions of solid-type construction, provide firestopping to completely fill spaces around the penetration, in accordance with ASTM E 814.
4. Where penetrations occur at fire-rated walls or partitions of hollow-type construction, provide firestopping to completely fill spaces around the penetration, on each side of the wall or partition, in accordance with ASTM E 814.
5. These requirements for penetrations shall apply whether or not sleeves have been provided, and whether or not penetrations are to be equipped with escutcheons or other trim. If penetrations are sleeved, firestop annular space - if any - between sleeve and wall of opening.

E. Provide firestopping to fill miscellaneous voids and openings in fire-rated construction in a manner essentially the same as specified above.

3.03 INSTALLATION

A. General:
   1. Installation of Firestops shall be performed by applicator/installers qualified and trained by the manufacturer. Installation shall be performed in strict accordance with manufacturer's detailed installation procedures.
   2. Apply Firestops in accordance with fire test reports, fire resistance requirements, acceptable sample installations, and manufacturer's recommendations.
   3. Coordinates with plumbing, mechanical, electrical and other trades to assure that all pipe, conduit, cable, and other items which penetrate fire related construction have been permanently installed prior to installation of Firestops, schedule and sequence the work to assure that partitions and other construction which would conceal penetrations are not erected prior to the installation of Firestops.
   4. At gypsum board fire walls the entire gap between the floor slab up to the bottom edge of the gypsum board is to be filled 100% and continuous.

B. Dam Construction: Install dams when required to properly contain Firestopping materials within openings and as required to achieve required fire resistance rating. Combustible damming material must be removed after appropriate curing. Incombustible damming materials may be left as a permanent component of the Firestop system.

C. Field Quality Control:
   1. Prepare and install firestopping systems in accordance with manufacturer's printed instructions and recommendations.
   2. Follow safety procedures recommended in the Material Safety Data Sheets.
   3. Finish surfaces of firestopping which is to remain exposed in the completed work to a uniform and level condition.
   4. All areas of work must be accessible until inspection by the applicable Code authorities.
   5. Correct unacceptable firestops and provide additional inspection to verify compliance with this specification at no additional cost.

3.04 CLEANING

A. Remove spilled and excess materials adjacent to firestopping without damaging adjacent surfaces.

B. Leave finished work in neat, clean condition with no evidence of spillovers or damage to adjacent surfaces.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish labor, materials, tools, and equipment required to completely close (with caulking compound or sealant) all joints to give a finished appearance. Items to be caulked or sealed include but are not limited to the following:
   1. Hollow metal frames.
   2. Exterior doors, louvers, windows and any other openings in exterior walls.
   3. Plumbing fixtures.
   4. Flooring, paving and sidewalk joints.
   5. Joints shown on drawings or specified to be caulked or sealed.
   6. All joints or gaps between similar or dissimilar materials that do not receive closure trim are to be caulked/sealed with the appropriate material as listed in Part 2 of this Section.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Qualifications of Applicators: Use workmen thoroughly skilled and specially trained in techniques of caulking, and completely familiar with manufacturer's published recommendations for caulking material used.

B. Rejection of Installed Caulking: Lack of skill by caulking installers is sufficient ground for Architect to reject installed caulking and to require its removal and complete recaulking at Contractor's expense.

C. Guarantee: Guarantee caulking materials and workmanship, in writing for 2 years after substantial completion date. Repair at Contractors expense any defects developing within guarantee period.

D. Submit manufacturer's product data sheets and color selection information for every brand and type of sealant, caulk and accessory item proposed for use on this project.

1.05 PRODUCT HANDLING

A. Protection: Protect caulking materials before, during, and after installation. Protect installed work and materials of other trades. In event of damage, immediately make repairs and replacements necessary at Contractor's expense.

B. Storage: Store caulking materials and equipment under conditions recommended by manufacturer. Do not use materials stored for period of time exceeding maximum recommended material shelf-life.

1.06 JOB CONDITIONS

A. Inspection: Carefully inspect installed work of trades and verify work is complete to point where this installation may properly commence.

B. Discrepancies: Do not proceed with installation in areas of discrepancy until discrepancies are fully resolved.

C. Do not install sealants under adverse weather conditions, or when temperatures are not within manufacturer's recommended limitations for installation. Install sealants only when forecasted weather conditions are favorable for proper care and development of high early bond strength.

PART 2 - PRODUCTS

2.01 MATERIALS FOR CAULKING AND SEALING

A. Select caulking materials for specific locations complying with manufacturers recommendations. Provide caulking, sealant and accessory items in color(s) selected to match adjacent materials or as selected by Architect from manufacturer's complete line.

B. VOC Content Of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
   1. Architectural Sealants: 250 g/L.
   2. Sealant primers for Nonporous Substrates: 250 g/L.
   3. Sealant primers for Porous Substrates: 775 g/L.

C. Acrylic Latex Caulk (interior only): General purpose, gun grade, nonsag, paintable, nonstaining latex sealant complying with ASTM C834.
   1. Sonolac by Sonnoborn.
   2. Tremflex 834 by Tremco.

D. Acoustical Sealant: General purpose, gun grade, nonsag, paintable, nonstaining latex sealant complying with ASTM C834.
   1. SHEETROCK Acoustical Sealant by U.S. Gypsum
   2. AC-20 FTR by Pecora
   3. Acoustical Sealant GSC by Grabber Construction Products
   4. Acoustical Sealant by Tremco

E. Polyurethane Sealant (for vertical surfaces): Single component, non-sag, gun grade product meeting ASTM C920, Type S, Grade NS, Class 25.
   1. NP-1 by BASF.
   2. Vulkem Dymonic FC by Tremco
   3. Dynatrol I by Pecora.
   4. QSC-102 by Carlisle.

F. Polyurethane Sealant (for horizontal surfaces): Single component, non-priming, self leveling, pourable grade product meeting ASTM C920, Type S, Grade P, Class 25.
   1. SL-1 by BASF.
   2. Vulkem 45SSL by Tremco
   3. NR-201 by Pecora.
   4. QSC-131 by Carlisle.

2.02 SEALANT BACKER RODS

A. Sealant Backer Rod for general use except at floor and deck joints: Open cell type as recommended by sealant manufacturer for compatibility with sealant.

B. Sealant Backer Rod for use at floor and deck joints: Closed cell type as recommended by sealant manufacturer for compatibility with sealant.

C. Provide rod sized and shaped to control joint depth for sealant placement, break bond of sealant at bottom of joint, form optimum shape of sealant bead on back side, and provide a highly compressible backer to minimize possibility of sealant extrusion when joint is compressed.

2.03 MISCELLANEOUS MATERIALS

A. Joint Cleaner Compound: Use type recommended by sealant and caulking compound manufacturer for joint surfaces to be cleaned.

B. Joint Primer/Sealer: Use type recommended by sealant manufacturer for joint surfaces to be primed or sealed.

C. Bond Breaker Tape: Use self adhesive polyethylene tape or plastic tape recommended by sealant manufacturer. Apply to sealant-contact surfaces where bond to substrate or joint filler must be avoided for proper performance of sealant.

D. Joint Filler: W.R. Meadows, Sealtight Standard Cork, Expansion Joint Filler produced from clean, selected, granulated cork bonded with a phenolic resin, or approved equal meeting ASTM D 1752, Type II.

2.04 GENERAL APPLICATION GUIDE

A. Interior caulking, except joints with ceramic tile, metal, glass and aluminum: Acrylic Latex Caulk.

B. Sound rated walls, partitions and ceilings: Acoustical Sealant.

C. Interior and Exterior joints with metal, glass and aluminum: Acrylic Latex Caulk.

D. Joints with ceramic tile and plumbing fixtures: Acrylic Latex Caulk.

E. Horizontal and Vertical building joints: Polyurethane sealant.

PART 3 - EXECUTION

3.01 CHOICE OF CAULKING MATERIAL

A. Use sealant and caulking materials best suited to the installation and recommended by caulking material manufacturer.

3.02 INSPECTION

A. Installer must examine substrates, (joint surfaces) and conditions under which joint sealer work is to be performed. Do not proceed with joint sealer work until unsatisfactory conditions are corrected.

3.03 JOINT PREPARATION

A. Clean joint surfaces immediately before installation of gaskets, sealants and caulking compounds. Remove dirt, insecure coatings, moisture and substrates which could interfere with gasket seal and bond of sealant or caulking compound.

B. Prime or seal joint surfaces where required, and when recommended by sealant manufacturer. Confine primer/sealer to areas of sealant bond. Do not allow spillage and migration onto adjoining surfaces.

3.04 INSTALLATION

A. Comply with manufacturer's printed instructions except when more stringent requirements are specified, and except when manufacturer's technical representative directs otherwise.

B. Set joint filler units at depth and position in joint as required to coordinate with other work, including installation of bond breakers, backer rods and sealants. Do not leave voids or gaps between ends of joint filler units.

C. Install sealant backer rod except when required to be omitted or recommended to be omitted by sealant manufacturer for application required.

D. Install bond breaker tape when required by manufacturer's recommendations to ensure liquid-applied sealants will perform as intended.

E. Employ proven installation techniques, which ensure sealants are deposited in uniform, continuous ribbon without gaps or air pockets, and with complete "wetting" of joint bond surfaces equally on opposite sides. Except as otherwise required, fill sealant rabbet to a slightly concave surface, slightly below adjoining surfaces. Where horizontal joints occur between a horizontal surface and vertical surface, fill joint to form a slight cove, so joint will not trap moisture and dirt.

F. Install liquid-applied sealant to depths required and as recommended by sealant manufacturer.

G. Spillage: Do not allow sealants and compounds to overflow from joint confines or to spill onto adjoining work, or to migrate into voids of exposed finished. Clean adjoining surfaces to eliminate evidence of spillage without damaging adjoining surfaces.

H. Recess edges of exposed joint fillers slightly behind adjoining surfaces, unless otherwise required, so compressed units will not protrude from joints.

I. Acoustical Sealant Application: Comply with recommendations of ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.

1. Where sound rated walls and partitions are penetrated by pipe, conduit, duct, etc.; pack annular space with acoustical fiberglass insulation until flush with both faces of wall. Seal both sides and the entire annular space between the penetrating item and the wall board with acoustical sealant. Also, seal at top and bottom edges of acoustical walls and partitions where wall board abuts a horizontal surface. Joint is to be full and continuous from slab to gypsum board edge at bottom of gypsum board walls.
2. Do not allow any rigid material or connection to bridge the separation between the acoustical construction and the penetrating item. Upon inspection, if bridging is found to exist, all sealed penetrations may be ordered removed and resealed at Contractor's expense.

3.05 CURE AND PROTECTION

A. Cure sealants and caulking compounds in compliance with manufacturer's instructions and recommendations, to obtain high early bond strength, internal cohesive strength and surface durability. Cure and protect sealants in manner which will minimize increases in modules of elasticity and accelerated aging effects.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

A. Exterior and interior expansion control assemblies, complete.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

C. Shop Drawings:
   1. Placement Drawings: Include line diagrams showing plans, elevations, sections, details, splices, entire route of each joint system, and attachments to other work. Where joint system change planes, provide isometric or clearly detailed drawing depicting how components interconnect.
   2. Schedule: Prepared by or under supervision of supplier. Include the following information in tabular form:
      a. Manufacturer and model number of each joint system.
      b. Joint system location cross-referenced to drawings.
      c. Nominal joint width.
      d. Movement capability.
      e. Classification as thermal or seismic.
      f. Materials, colors, and finishes.
      g. Product options.

1.04 QUALITY ASSURANCE

A. Obtain expansion joint cover assemblies from one source from single manufacturer.

B. Installer Qualifications: Approved by manufacturer.

1.05 PROJECT/SITE CONDITIONS

A. Deliver joint covers to project site in new, clean, unopened containers of size and strength to protect materials during shipping.

B. Store materials in original containers in dry location.

1.06 WARRANTY

A. Provide manufacturer's standard warranty one year material and workmanship warranty for each type of expansion joint system, except two years for roof expansion assemblies by manufacturer and installer.

1.07 COORDINATION

A. Coordinate work with work of other trades.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Construction Specialties, Inc. is specified. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include, but are not limited to, the following:
   1. Balco, Inc.
   2. MM Systems.

2.02 MATERIALS

A. Aluminum: ASTM B 221, alloy 6063-T5 for extrusions, ASTM B 209, alloy 6061-T6 for plate and 5052-H32 alloy for sheet.
   1. Protect aluminum surfaces to be placed in contact with cementitious materials with a protective coating.
   2. Aluminum Finish: Comply with NAAMM "Metal Finishes Manual" for finish designations and application recommendations. Apply finishes in factory after fabrication. Protect finishes on exposed surfaces before shipment.
      a. Mill finish.

B. Elastomeric Seals: Preformed elastomeric membranes or extrusions to be installed in metal frames. Seal color as selected by Architect.

C. Strip Seals: ASTM E 1783; preformed elastomeric membrane or tubular extrusions having an internal baffle system and secured in or over a joint by a metal locking rail. Seal color as selected by Architect.

D. Accessories: Manufacturer's standard anchors, clips, fasteners, set screws, spacers, filler materials, lubricant, adhesive, and other accessories compatible with material in contact, as indicated and required for complete installations.

2.03 EXPANSION JOINT ASSEMBLIES

A. General: Provide assemblies of design, basic profile, materials, and operation indicated. Provide units comparable to those specified to accommodate joint size, variations in adjacent surfaces, and structural movement without material degradation or fatigue when tested according to ASTM E 1399.

1. Furnish units in longest practicable lengths to minimize number of end joints. Provide hairline mitered corners where joint changes directions or abutts other materials.
2. Include closure materials and transition pieces, tee-joints, corner, curbs, cross-connections, and other accessories as required to provide continuous joint cover assemblies.

B. Design assemblies for sizes and movement characteristics as indicated on drawings.

C. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine surfaces where joint assemblies will be installed for installation tolerances and other conditions affecting performance of work. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Manufacturer's Instructions: In addition to requirements of these specifications, comply with manufacturer's instructions and recommendations, including preparing substrate, applying materials, and protecting installed units.

B. Provide anchorage devices and fasteners where necessary to secure assemblies to in-place construction, included threaded fasteners with drilled-in expansion shields for masonry. Provide fasteners of metal, type, and size to suit type of construction indicated and provide for secure attachment of assemblies.

3.03 INSTALLATION

A. Metal Frames: Perform cutting, drilling, and fitting required to install joint systems.
1. Install in true alignment and proper relationship to joints and adjoining finished surfaces measured from established lines and levels.
2. Adjust for differences between actual structural gap and nominal design gap due to ambient temperature at time of installation. Notify Architect where discrepancies occur that will affect proper installation and performance.
3. Cut and fit ends to accommodate thermal expansion and contraction of metal without buckling of frames.
4. Location in continuous contact with adjacent surfaces.
5. Shim to level where required. Support underside of frames continuously to prevent vertical deflection when in service.
6. Locate anchors at interval recommended by manufacturer, but not less than three inches from each end and not more than 24 inches o.c.

B. Seals In Metal Frames: Install elastomeric seals and membranes in frames to comply with manufacturer's written instructions. Install with minimum number of end joints.
1. Provide in continuous lengths for straight sections.

2. Seal transitions according to manufacturer's written instructions. Vulcanize or heat-weld field-spliced joints as recommended by manufacturer.
3. Mechanically lock seals into frames or adhere to frames with adhesive of pressure-sensitive tape as recommended by manufacturer.

C Terminate exposed ends of joint assemblies with field- or factory-fabricated termination devices.

D. Roof Expansion Assemblies: Extend roof expansion joint assemblies over curbs with factory-fabricated transitions to provide continuous uninterrupted, waterproof roof expansion assembly.

3.04 CLEANING AND PROTECTION

A. Do not remove protective covering until finish work in adjacent areas is complete. When protective covering is removed, clean exposed metal surfaces to comply with manufacturer's instructions.

3.05 SCHEDULE

A. Wall: C/S Model: FWS-300M

END OF SECTION

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PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Provide hollow metal doors, door frames and window frames required.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Use skilled workmen thoroughly trained and experienced and completely familiar with specified requirements and methods needed for proper performance of work of this Section.

B. Codes and Standards:
1. Manufacture labeled units in strict accordance with specifications and procedures of Underwriters' Laboratories, Inc. Labels must be affixed to rated assemblies.
2. In guarantee and Shop Drawings, apply and use definitions and nomenclature established in American National Standards Institute publication A 123.1 "Nomenclature for Steel Doors and Steel Door Frames."
3. Fire-Rated Units: **Affix metal plates to jamb side or top of door and/or frame stating the appropriate fire rating. Paper labels will not be accepted. Do not apply paint or stain over metal labels. Mask off the label before applying finish and remove masking after finish is dry.**

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Protection:
1. Deliver, store, and handle hollow metal units to prevent damage and deterioration.
2. Provide packaging of cardboard or containers, separators, banding, spreaders, and paper wrappings to completely protect hollow metal units during transportation and storage.
3. Store units upright, in protected dry area, at least one inch off ground and with at least 1/4" air space between individual pieces. Protect primed and hardware surfaces.

4. Protect installed work and materials of other trades.
5. Avoid use of non-vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4" spaces between stacked units to promote air circulation.

B. Replacements: Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided finish items are equal in all respects to new work, otherwise, remove and replace damaged items as directed at Contractor's expense.

PART 2 - PRODUCTS

2.01 GENERAL

A. Fabricate hollow metal items rigid, neat in appearance, and free from defects, warp, or buckle.

B. Provide clean cut, straight and true molded members with well-formed and aligned miters.

C. Dress exposed weld joints smooth.

D. Door Clearances: Maximum 1/8" at jambs and heads, 1/8" at meeting edges of pairs of doors, and 3/4" at bottom from finished floorline.

E. Close top and bottom edges of exterior doors flush. Seal against water penetration with flush steel channel fillers.

2.02 ACCEPTABLE MANUFACTURERS

A. Provide hollow metal units by Amweld Building Products, Inc., The Ceco Corp., Curries Mfg. Co., Mesker Industries, Inc., Republic Builders Prod. Corp., Steelcraft, Trussbilt, Inc., or approved equal.

2.03 FACTORY PREPARATION

A. Prepare units to receive hardware scheduled in "Hardware" Section of these specifications and in accordance with ANSI Standards A 115-1 through A 115-17.

B. Cut, mortise, reinforce, drill, and tap units at factory, except drill and tap for surface applied hardware at job when hardware is applied.

C. Prepare door frames for rubber silencers to be provided with frames.

2.04 SHOP PRIME COAT FOR FIELD FINISHED DOORS AND FRAMES

A. Clean, treat, and prime exposed surfaces of hollow metal units, including galvanized surfaces.

B. Clean steel surfaces free of mill scale, rust, oil, grease, dirt, and foreign materials before applying paint.

C. Apply shop coat of rust-inhibiting prime paint of even consistency to provide uniformly finished surface ready to receive finish paint.

2.05 FLUSH TYPE DOORS

A. Form flush type hollow metal doors with outer sheets of cold rolled steel conforming to ASTM Designation A 1008. No exposed face seams
   1. Form exterior doors using minimum 16 gauge Galvanized steel.
   2. Form interior doors using minimum 18 gauge steel.

B. Core material at interior doors is to be either water-resistant honeycomb insulation core glued in place, rigid insulation core glued in place or rigid insulation core foamed in place. Core material at exterior doors is to be either rigid insulation core glued in place or rigid insulation core foamed in place.
   1. Honeycomb Insulation Core (Glued, Interior Only): Crushing strength of not less than 4,000 p.s.f., and with lamination to withstand not less than 1,500 p.s.f. surface shear.
   2. Rigid Insulation Core (Glued, Interior or Exterior): Polystyrene slab, density not less than 1.0 pounds per cubic foot.
   3. Rigid Insulation Core (Foamed-in-Place, Interior or Exterior): Nonburning type having compressive strength and shear strength of not less than 20 p.s.i., an insulation to steel bonding strength at least equal to the strength of the insulation, be dimensionally stable within plus or minus 5% volume after 24-hour exposure to temperatures ranging from minus 15E F. to 200E F., have no voids exceeding 1/2" in any direction, and have density of not less than 1.8 pounds per cubic foot.

C. Provide doors complete with glazed panels where required. Glass is specified in Section 08 8000

2.06 FIRE DOORS

A. At fire rated openings, furnish doors bearing Underwriters' Laboratories or Warnok-Hersey label for fire rating required. Furnish overlapping metal astragal on pairs of fire doors except where equipped with approved rim type exit hardware and provided with a removable mullion.

B. For 1-1/2 hour (B) and 1 hour (B) doors used in stairway enclosures the average temperature developed on the unexposed side shall not exceed 450 deg.F. at the end of 30 minutes of standard fire test exposure. The label attached to the door shall indicate compliance with this requirement.

2.07 WELDED DOOR FRAMES

A. Form pressed steel frames using cold rolled steel conforming to ASTM Designation A 1008.
   1. Form exterior frames using minimum 14 gauge Galvanized steel.
   2. Form interior frames using minimum 16 gauge steel.

B. Secure headers and jambs at corners by external welding of faces. Grind smooth to provide invisible joints.
   1. Knock-Down frames are not acceptable.

C. Provide frames with minimum of 3 anchors per jamb for adjoining wall construction and floor anchors for attachment at floor. Construct anchors using minimum 18 gauge steel.

D. For frames that are to receive concealed closers mounted in the head; provide a cover box to attach to the inside of the frame that will completely cover and protect the closer.

E. At fire rated openings, furnish frames bearing Underwriters' Laboratories or Warkok-Hersey label for fire rating required with anchors approved for type installation required.
   1. Smoke- and Draft-Control Assemblies: Provide an assembly with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.

2.08 FIXED GLASS METAL FRAMES

A. Fabricate hollow metal framing using 14 gauge cold rolled steel conforming to ASTM Designation A 1008. Apply steel tube glass stops with flush head, countersunk screws, spaced maximum of 12" o.c. unless otherwise required. Fit joints neatly, miter at corners, and make welds invisible by grinding smooth. Provide tamper-proof type anchors.
   1. Knock-Down frames are not acceptable.

B. Anchor frames to wall construction with anchors set not less than 2'-0" o.c. around perimeter of frame.

C. Glass requirements specified in Section 08 8000

D. At fire rated openings, furnish frames bearing Underwriters' Laboratories or Warkok-Hersey label for fire rating required with anchors approved for type installation required.
   1. Smoke- and Draft-Control Assemblies: Provide an assembly with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Examine areas and conditions for work of this Section. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

A. Install hollow metal units in strict accordance with approved Shop Drawings and manufacturer's recommendations.

B. Set frames accurately, plumbed, aligned, and securely anchored.

C. Install finish hardware in strict accordance with manufacturers' recommendations. Eliminate hinge-bound conditions, making items operate smoothly with secure locking and latching.

3.03 ADJUST AND CLEAN

A. Immediately after installation, sand smooth rusted and damaged prime coat. Apply compatible touch-up air-drying primer.

B. Check and adjust operating finish hardware items, leaving hollow metal units undamaged and in proper operating condition.

C. Excessive filing or grinding of strike plate will not be accepted. Filing and grinding not to exceed 1/8" in any direction.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Electrically operated overhead insulated rolling doors

B. Products That May Be Supplied, But Are Not Installed Under This Section:
   1. Control Station

1.02 SYSTEM DESCRIPTION

A. Design Requirements:
   1. Wind Loading:
      a. Supply doors to withstand up to 20 psf design wind load
      b. Supply doors to be operational up to 20 PSF maximum wind load
   2. Cycle Life: Design doors of standard construction for normal use of up to 20 cycles per day maximum, and an overall maximum of 50,000 operating cycles for the life of the door
   3. Seismic Performance: Provide manufacturer's seismic calculations confirming ASCE7-10
   4. Insulated Door Slat Material Requirements:
      a. Flame Spread Index of 0 and a Smoke Developed Index of 10 as tested per ASTM E84
      b. Sound Transmission Class (STC) rating up to 30 for the curtain and up to 32 for the entire assembly, as tested per ASTM E90 and based on testing a complete, operable assembly
      c. Minimum R-value of 8.0 (U-value of 0.125) as calculated using the ASHRAE Handbook of Fundamentals
      d. Insulation to be CFC Free with an Ozone Depletion Potential (ODP) rating of zero
   5. Custom Layout: Product has been reconfigured for a custom layout, refer to drawings by CornellCookson.
   6. Customized Product: This product has custom modifications designed by CornellCookson. Contact Manufacturer for details.

1.03 SUBMITTALS

A. Reference Section 01 3300 Submittal Procedures; submit the following items:
   1. Product Data
   2. Shop Drawings: Include special conditions not detailed in Product Data. Show interface with adjacent work.
   3. Quality Assurance/Control Submittals:
      a. Provide manufacturer ISO 9001:2015 registration
      b. Provide manufacturer and installer qualifications - see below
      c. Provide manufacturer's installation instructions

4. Closeout Submittals:
    a. Operation and Maintenance Manual
    b. Certificate stating that installed materials comply with this specification

1.04 QUALITY ASSURANCE

A. Qualifications:
    1. Manufacturer Qualifications: ISO 9001:2015 registered and a minimum of five years experience in producing doors of the type specified
    2. Installer Qualifications: Manufacturer's approval

1.05 DELIVERY STORAGE AND HANDLING

A. Follow manufacturer's instructions

1.06 WARRANTY

A. Standard Warranty: Two years from date of shipment against defects in material and workmanship

B. Maintenance: Submit for owner’s consideration and acceptance of a maintenance service agreement for installed products

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Manufacturer: Cookson: 1901 South Litchfield Road, Goodyear, AZ 85338. Telephone: (800) 294-4358. Substitutions: Not permitted

2.02 PRODUCT INFORMATION

A. Model: ESD20

2.03 MATERIALS

A. Curtain:
    1. Fabrication:
        a. Slat Material: No. 6F, (Listed Exterior/Interior):
            1) Galvanized Steel/Galvanized Steel (No Paint Finish): Manufacturer recommended gauge based on performance requirements. Minimum 24/24 gauge, Grade 40, ASTM A 653 galvanized steel zinc coating.
        b. Insulation: 7/8 inch (22 mm) foamed-in-place, closed cell urethane
        c. Total Slat Thickness: 15/16 inch (24 mm)
        d. Flame Spread Index of 0 and a Smoke Developed Index of 10 as tested per ASTM E84
        e. R-value: 8.0

f. STC Rating: Up to 30 for the curtain and up to 32 for the entire assembly, as tested per ASTM E90 and based on testing a complete, operable assembly

2. Exterior Slat Finish:
   a. GalvaNex™ Coating System (Stock Colors):
      1) GalvaNex™ - ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding baked-on base coat and baked-on polyester enamel finish coat
      2) GalvaNex™Ultra- Ultra Powder Coat to be applied as a protective top coat over GalvaNex finish. Top coat is a polyester based structured wear resistant clear powder coat of 2.5-3.5 mils cured film thickness. ASTM D-3363 pencil hardness: 2H or better. Tested per ASTM B117. Base coating of GalvaNex to be ASTM A 653 galvanized base coating treated with dual process rising agents in preparation for chemical bonding baked-on base coat and baked-on polyester enamel finish coat.

3. Interior Slat Finish:
   a. GalvaNex™ Coating System (Stock Colors):
      1) ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding baked-on base coat and baked-on polyester enamel finish coat

B. Endlocks: Fabricate interlocking sections with high strength nylon endlocks on alternate slats each secured with two ¼" (6.35 mm) rivets. Provide windlocks as required to meet specified wind load.
   1. Nylon: Required up to 21'-5" width (DBG - Distance Between Guides)

C. Bottom Bar
   1. Configuration: Insulated Bottom Bar: Reinforced extruded aluminum interior face with full depth insulation and exterior skin slat to match curtain material and gauge. Minimum 4" tall x 1-1/16" thickness.
   2. Finish: Exterior: Match slats

D. Guides:
   1. Fabrication: Minimum 3/16 inch (4.76 mm) structural angles. Provide windlock bars of same material when windlocks are required to meet specified wind load. Top of inner and outer guide angles to be flared outwards to form bellmouth for smooth entry of curtain into guides. Provide removable guide stoppers to prevent over travel of curtain and bottom bar.
   2. Top 16 ½" (419.10 mm) of coil side guide angles to be removable for ease of curtain installation and as needed for future curtain service.
   3. Finish: Powder Coat (Stock Colors): Zirconium treatment followed by a baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness
      a. Corrosion Inhibitive: Zirconium treatment followed by a corrosion inhibitive baked-on zinc enriched gray polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness

E. Counterbalance Shaft Assembly:
   1. Barrel: Steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot (2.5 mm per meter) of width

2. Spring Balance: Oil-tempered, heat-treated steel helical torsion spring assembly designed for proper balance of door to ensure that maximum effort to operate will not exceed 25 lbs (110 N). Provide wheel for applying and adjusting spring torque.

F. Brackets:
Fabricate from minimum 3/16 inch (5 mm) steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures
1. Finish: Powder Coat (Stock Colors): Zirconium treatment followed by a baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness

G. Hood:
Minimum 24 gage galvanized steel with reinforced top and bottom edges. Provide minimum 1/4 inch (6.35 mm) steel intermediate support brackets as required to prevent excessive sag.
1. Finish: GalvaNex™ Coating System (Stock Colors):
   a. ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding baked-on base coat and baked-on polyester enamel finish coat

H. Weatherstripping:
1. Bottom Bar: Bottom Bar, Motor Operated Doors: Sensing/weather edge with neoprene astragal extending full width of door bottom bar
2. Guides: Replaceable vinyl strip on guides sealing against fascia of curtain
3. Hood: Neoprene/rayon baffle to impede air flow above coil
4. Lintel Seal: Nylon brush seal fitted at door header to impede air flow

2.04 OPERATION

A. Motor – Standard Use – Model MG (Industrial Duty Gear Head) Operator: The operator must not extend above or below the door coil when mounted front-of-coil. Rated for a maximum of 20 cycles per hour (not to be used for consecutive hours) cULus listed (to comply with UL requirements in The United States and Canada), Totally Enclosed Non Ventilated gear head operator(s) rated (1/3) (1/2) or (3/4) hp as recommended by door manufacture for size and type of door. Provide complete with electric motor and factory pre-wired motor control terminals, maintenance free solenoid actuated brake, and control station(s). Motor shall be high starting torque, industrial type, protected against overload with an auto-reset thermal sensing device. Primary speed reduction shall be heavy-duty, lubricated gears with mechanical braking to hold the door in any position. Operator drive and door driven sprockets shall be provided with #50 roller chain. Provide an integral Motor Mounted Interlock system to prevent damage to door and operator when mechanical door locking devices are provided. Operator shall be capable of driving the door at a speed of 8 to 9 inches per second (20 to 23 cm/sec). Fully adjustable, driven linear screw type cam limit switch mechanism shall synchronize the operator with the door. The electrical contractor shall mount the control station(s) and supply the appropriate disconnect switch, all conduit and wiring per the overhead door wiring instructions.

1. Supply Cookson model EverGard Control Box with programmable logic board and back-up power supply. 120v AC input power with auto switch to 24v DC back-up power. Back-up power to provide minimum 10 open/close cycles and 48 hr stand-by.
    a. (2) 12v rechargeable lead sealed batteries.
    b. Programmable battery load testing
    c. Monitoring points for open/close position, AC power loss and battery low voltage
    d. 12'-0" (standard) wiring whip to connect control box and motor
    e. Emergency Push Button (EPB): Flush mounted, single red push button station wired for emergency OPEN function only. If grille is at full open (normal business hours), depressing EPB will not affect the grille's position.
    f. Door power indicator: Flush mounted voltage monitor for battery back-up system. Flashing red light indicates low battery power and maintenance check-up. Can be located up to 150 ft. away from motor control box.
    g. Non-resettable cycle counter
    h. UL325 & UL864 compliant system.

B. Motor Activator:
    1. Surface mounted: "Open/Close/Stop" push buttons; NEMA 1

C. Control Operation:
    1. Momentary Contact to Close:
    Fail-safe, UL325-2010 Compliant Entrapment Protection for Motor Operation.
        a. SafetyGard UL325 Light Curtain with Dynamic Sequential Blanking: Provide monitored, non-contact light curtain consisting of a transmitter and a receiver to be mounted to the guide assembly of the door in the provided mounting channel, projecting a thru beam across the width of the door for the height of the light curtain (3ft or 6ft depending on opening size of the door). Interruption of beam before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position
        b. 2-wire, E.L.R. electric sensing/weather edge seal extending full width of door bottom bar. Provide a retracting safety cord connection to control circuit.
    2. Sensing/Weather Edge: Automatic reversing control by an automatic sensing switch within neoprene or rubber astragal extending full width of door bottom bar.
        a. Electric sensing edge device. Provide a wireless sensing edge connection to motor operator eliminating the need for a physical traveling electric cord connection between bottom bar sensing edge device and motor operator.
        b. Pneumatic sensing edge device. Provide self coiling cable connection to control circuit.

2.05 ACCESSORIES

D. Locking: None

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine substrates upon which work will be installed and verify conditions are in accordance with approved shop drawings

B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates

C. Commencement of work by installer is acceptance of substrate

3.02 INSTALLATION

A. General: Install door and operating equipment with necessary hardware, anchors, inserts, hangers and supports

B. Follow manufacturer's installation instructions

3.03 ADJUSTING

A. Following completion of installation, including related work by others, lubricate, test, and adjust doors for ease of operation, free from warp, twist, or distortion

3.04 CLEANING

A. Clean surfaces soiled by work as recommended by manufacturer

B. Remove surplus materials and debris from the site

3.05 DEMONSTRATION

A. Demonstrate proper operation to Owner's Representative

B. Instruct Owner's Representative in maintenance procedures

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Provide doors specified including hardware, operating devices, and accessories for complete installation.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 GUARANTEE

A. Warranty provisions for Work under this Contract are specified in General Conditions. Supplementary to General Conditions, furnish written guarantee stating work is guaranteed to serve intended purpose under normal use and that defects in materials and workmanship within 1-year period after Contract substantial completion date will be repaired, replaced or made good at Contractor's expense.

PART 2 - PRODUCTS

2.01 FIRE RATED STEEL ROLLING DOORS

A. Manufacturer: Cookson: 1901 S. Litchfield Road, Good Year, AX 85338. Telephone: (800) 294-4358. Substitutions: Not permitted.

B. Model: ERD21, Fire & Smoke Rated, Insulated.

C. Curtain:
   1. Slats: No. 6M
      a. Galvanized Steel with Finish as Described Below: No. 6M, minimum 22 gauge, Grade 40 steel, ASTM A 653 galvanized steel zinc coating
   2. Mineral Wool Insulated Door Material:
      a. Mineral Wool Insulated Door Material: 7/8 inch (22 mm) thick fire retardant mineral wool, ASTM C665-95 or ASTM C612-93

b. Flame Spread Index of 0 and a Smoke Developed Index of 0 as tested per ASTM E84.
c. R-value: Minimum R-Value 5.3 (U-value of 0.189) as calculated using the ASHRAE Handbook of Fundamentals

3. Finish:
a. GalvaNex™ Coating System (Stock Colors):
1) GalvaNex™ - ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding baked-on base coat and gray,tan,white,brown baked-on polyester enamel finish coat

D. Endlocks: Fabricate interlocking continuous slat sections with high strength steel endlocks secured with two ¼" (6.35 mm) rivets per UL requirements.

E. Bottom Bar:
1. Configuration:
a. Structural Steel Angles: 2 structural steel angles minimum 2"x2"x1/8" (50x50x3.2 mm)
2. Finish:
a. Powder Coat (Stock Colors): Zirconium treatment followed by Architect gray,tan,white,brown baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness

F. Guides: Minimum 3/16 inch (4.76 mm) structural steel. Top of inner and outer guide angles to be flared outwards to form bellmouth for smooth entry of curtain into guides. Provide removable guide stoppers to prevent over travel of curtain and bottom bar. Top 16 ½" (419.10 mm) of coil side guide angles to be removable for ease of curtain installation and as needed for future curtain service.
1. Top 16 ½" (419.10 mm) of coil side guide angles to be removable for ease of curtain installation and as needed for future curtain service.
2. Finish: Powder Coat (Stock Colors): Zirconium treatment followed by a gray,tan,white,brown baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness

G. Counterbalance Shaft Assembly:
1. Barrel: Steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot (2.5 mm per meter) of width
2. Spring Balance: Oil-tempered, heat-treated steel helical torsion spring assembly designed for proper balance of door to ensure that maximum effort to operate will not exceed 25 lbs (110 N). Provide wheel for applying and adjusting spring torque.

H. Brackets: Fabricate from minimum 1/4 inch (6.35 mm) steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures
1. Finish: Powder Coat (Stock Colors): Zirconium treatment followed by a gray,tan,white,brown baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness

I. Hood: Minimum 24 gauge galvanized steel with reinforced top and bottom edges. Provide minimum 1/4 inch (6.35 mm) steel intermediate support brackets
   1. GalvaNex™ Coating System (Stock Colors): ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding baked-on base coat and gray,tan,white,brown baked-on polyester enamel finish coat

J. Combination Weather/Smoke Seals:
   1. Bottom Bar: Combination smoke seal/sensing edge
   2. Guides and Head: Replaceable, UL listed, brush smoke seals sealing against fascia side of curtain

K. Motor Operation:
   1. AlarmGard Advanced Fire Door Motor Operation: UL listed NEMA 1 enclosure, horsepower as recommended by manufacturer, 115v,230v,460v single and three phase service. Provide a totally enclosed non ventilated motor, removable without affecting the setting of limit switches; thermal overload protection, planetary gear reduction, adjustable rotary limit switch mechanism and a transformer with 24v secondary output. All internal electrical components are to be prewired to terminal blocks.
      a. Provide a failsafe motor operated door assembly requiring no ancillary or externally mounted release devices, cables, chains, pulleys, reset handles or mechanisms
      b. Provide an internal electrical failsafe release device that requires no additional wiring, external cables or mounting locations.
      c. Provide an internal solenoid brake mechanism to hold the door at any position during normal door operation.
      d. Provide logic for] fully monitored safety reversing devices such that the failure of any single monitored device will cause the motor operator to automatically revert to constant pressure to close.
      e. Electrically activate door system automatic closure by notification from central alarm services
      f. Provide an automatic alarm closure selectable time delay of zero or ten seconds.
      g. Control automatic closure speed with an internal, totally enclosed, variable rate centrifugal governor without the use of electrical pulsation, constant rate viscosity, oscillation type or other exposed governing devices.
      h. Maintain automatic closure speed at not more than 9” (229 mm) per second.
      i. Enable safety edge function during alarm closing while power is present for 1cycle Enable door to rest upon obstruction following this sequence.
      j. Electrically reset internal failsafe release device and door operating system upon restoration of electrical power and upon clearing of the alarm signal without requiring human interaction.
      k. Provide selectable ability for the door system to automatically self-cycle to the fully open position following automatic reset without requiring human interaction.
      l. Provide an integral, non-resettable cycle counter.
      m. Ensure that manual resetting of spring tension, release devices, linkages or mechanical dropouts will not be required.

n. Provide minimum #50 roller chain for drive connection from motor drive assembly to the door drive shaft.
o. Install system only with manufacturer supplied or specified fasteners.
p. Notify electrical contractor to mount control station(s) and supply the appropriate disconnect switch, all conduit and wiring per the door system wiring instructions.
q. Drop test and reset door system twice by all means of activation and comply fully with NFPA 80 Section 5.

L. Motor Activator:
1. Surface mounted: "Open/Close/Stop" push buttons; NEMA 1
2. Handheld Remote Activator where scheduled. Provide 2 per door.

M. Control Operation:
1. Momentary contact to close: Fail- safe, UL325-2010 Compliant Entrapment Protection for Motor Operation
a. Continuously monitored, wireless sensing/weather edge seal extending full width of door bottom bar.

N. Sensing/Smoke Seal Edge: Provide automatic reversing control by an automatic sensing switch within neoprene or rubber astragal extending full width of door bottom bar.

O. Electric Sensing Edge Device:
1. Provide only a wireless sensing edge connection to motor operator.
2. Electric coiling cords or take-up reels are not allowed to connect bottom sensing edge to motor.

P. Locking: None

2.02 LABELED STEEL ROLLING COUNTER SHUTTERS

A. Provide doors manufactured by Overhead Door Corp., Dallas, Texas, 1-800-887-3667, or approved equal.

B. Provide "Fire King" Model **640** between jamb mounted.

C. Construct doors of interlocking rollformed slats Type F-158.
1. Panel Thickness: 1/2"
2. Slats: 22 ga.
3. Springs: Manufacturer's standard.

D. Finish: PowderGuard® powder coat finish in standard color to be selected by Architect.

E. Lock Mechanism: Keyed cylinder

F. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.

G. Operation: Electric RSX 1/2 hp.

H. Activation: Automatic closing is accomplished by the activation of fire and smoke sensing devices and shall be connected to the building's primary fire alarm system.
   1. Provide Fire Sentinel® time-delay release device.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine substrates and conditions under which overhead rolling doors are to be installed. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

A. Install door and operating equipment, complete with necessary hardware, jamb and head mold strip, anchors, inserts, hangers, and equipment supports complying with final Shop Drawings, and manufacturer's installation instructions.

B. Install rated doors complying with U.L. Specifications.

C. Lubricate, test, and adjust doors to provide easy operation, proper closing, and secure locking.

D. Instruct Owner in operation and maintenance of doors.

E. Touch up scuffs and abrasions in finish paint.

END OF SECTION

PART 1 - GENERAL

1.01 SCOPE

A. Provide aluminum framing specified.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Fabricate exterior door and frame units to withstand the wind pressure loading shown or, or if not shown, 20 lbs. per sq. ft. on the gross area of the frames, doors, panels and glass, acting inward and also outward.

1.05 WARRANTY

A. Submit a warranty signed by the manufacturer, contractor, installer, agreeing to replace aluminum doors, windows, framing and glazing which fall in materials and workmanship within 2 years of the date of acceptance. Failure of materials or workmanship shall include, but not be limited to, failure in operation of doors, windows, and hardware, excessive leakage of air infiltration, excessive deflections, delamination of panels, deterioration of finish or metal in excess of normal weathering, and defect in accessories, weatherstripping, and other components of the work.
   1. Submit 5 year warranty on anodized finish.

B. Manufacturer’s Product Warranty: Submit, for Owner’s acceptance, manufacturer’s warranty for entrance system as follows:
   1. Welded door corner construction shall be supported with a LIMITED LIFETIME WARRANTY for the life of the door under normal use. SEE SECTION 2.02, item C below for DOOR CONSTRUCTION.

1.06 ADJUSTMENT

A. After installation, make adjustments as necessary to insure proper operation of all hardware items.

B. Door Opening Force: In accordance with the Americans With Disabilities Act (ADA), adjust all door hardware so that the maximum force required for pushing or pulling open a door shall be as follows:
   1. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority.
   2. Exterior hinged doors: 8.5 lbf (SBS)
   3. Interior hinged doors: 5.0 lbf
   4. These forces do not apply to the force required to retract latch bolts or disengage other devices that may hold the door in a closed position.

C. Door Closers: If door is equipped with a closer, then the sweep period of the closer shall be adjusted so that from an open position of 70 deg., the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers who produce products that may be submitted to Architect for review are:
   1. Kawneer
   2. Oldcastle BE
   3. EFCO
   4. Tubelite

2.02 FRAMING

A. Provide standard shapes and moldings of Kawneer glazed framing system, or approved equal.
   1. Trifab VG 451T at exterior

B. Subsill: Manufacturer's standard High-Performance (HP) subsill with sealed end-dams.

C. Storefront System Performance Requirements:
   1. Air Infiltration: The test specimen shall be tested in accordance with ASTM E 283. Air infiltration rate shall not exceed 0.06 cfm/ft^2 at a static air pressure differential of 6.24 psf (300 Pa).), with interior perimeter seal installed.
   2. Water Resistance: The test specimen shall be tested in accordance with ASTM E 331. There shall be no leakage at a minimum static air pressure differential of 10 psf (383 Pa) as defined in AAMA 501.
   3. Uniform Load: A static air design load of 20 psf shall be applied in the positive and negative direction in accordance with ASTM E 330. There shall be no deflection in excess of L/175 of the span of any framing member. At a structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.2% of their clear spans shall occur.
   4. Thermal Transmittance (U-factor): When tested to AAMA Specification 1503, the thermal transmittance (U-factor) shall not be more than: 0.44 (low-e) or 0.61 (clear), as determined by AAMA 507 or NFRC 100.

2.03 ALUMINUM FLASHING AND BREAKMETAL

A. Provide 0.040 thick material for flashing and 0.090 material for breakmetal.

2.04 SEALANTS

A. Do Not Use Silicon Sealant for any application. Due to Owner requirements, only Polyurethane or other acceptable sealants will be allowed.

2.05 FINISH

A. Color Anodic Coating, Class 1: AAM10C22A44 – Bronze Color to be selected by Architect.

B. Coating electrolytically deposited complying with AAMA 606.1, 0.7 mil thick minimum.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install in compliance with manufacturer's recommendations and accepted shop drawings. Set units plumb, level and true to line, without warp or rack of framing, windows, and doors. Anchor securely in place. Secure to structure with non-staining, non-corrosive shims, anchors, fasteners, spacers, and fillers. Use care in erection so as not to mar, abrade, or stain finished surfaces. Where aluminum is to be placed in contact with steel, concrete and other dissimilar surface, back paint the aluminum before erection with an acceptable bituminous paint.

B. Seal frames with an approved sealant in color to match frames, making a neat fully weatherproof job. Refer to Section 07 9000, and comply with requirements of that section.

C. Protection: After erection, adequately protect by masking, light motor oil, vaseline or other acceptable covering all exposed parts of the work and the finish from damage by grinding and polishing machines and/or by plaster, lime, cement, acid or other harmful substances.

D. Cleaning: After completion of all other work in the vicinity of the aluminum doors, windows, and framing, remove all masking, vaseline and/or other covering used to protect the work, and thoroughly clean the aluminum surfaces with soap and plain water or a petroleum product such as white gasoline, kerosene, or distillate. Do not use abrasive cleaning agents.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Sliding doors.
3. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Cylinders specified for doors in other sections.

C. Codes and References: Comply with the version adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

D. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.
5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. Content: Include the following information:

    a. Type, style, function, size, label, hand, and finish of each door hardware item.
    b. Manufacturer of each item.
    c. Fastenings and other pertinent information.
    d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    e. Explanation of abbreviations, symbols, and codes contained in schedule.
    f. Mounting locations for door hardware.
    g. Door and frame sizes and materials.
    h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

    a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
    b. Complete (risers, point-to-point) access control system block wiring diagrams.
    c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

1.4 CLOSEOUT SUBMITTALS

A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

1.5 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

F. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.

G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.

3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

I. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

1.6 DELIVERY, STORAGE AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.7 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.8 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Hardware shall not have any visible manufacturer names on exposed materials, except cylinders, when the door is in a closed position.

2.2 BUTT HINGES

A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:

a. Two Hinges: For doors with heights up to 60 inches.
b. Three Hinges: For doors with heights 61 to 90 inches.
c. Four Hinges: For doors with heights 91 to 120 inches.
d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

a. Widths up to 3’0”: 4-1/2” standard or heavy weight as specified.
b. Sizes from 3’1” to 4’0”: 5” standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

    a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
    b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following:

    a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for all out-swinging lockable doors.

5. Manufacturers:

    a. McKinney (MK) - TA/T4A Series, 5-knuckle.

2.3 CONTINUOUS HINGES

A. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Manufacturers:.

    a. Pemko (PE).

2.4 POWER TRANSFER DEVICES

A. Electrified Quick Connect Transfer Hinges: Provide electrified transfer hinges with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets with a 1-year warranty. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

    a. McKinney (MK) - QC (# wires) Option.

B. Electrified Quick Connect Continuous Geared Transfer Hinges: Provide electrified transfer continuous geared hinges with a removable service panel cutout accessible without de-mounting door from the frame. Furnish with Molex™ standardized plug connectors with sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Manufacturers:

    a. Pemko (PE) - SER-QC (# wires) Option.

C. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:

    a. McKinney (MK) - Electrical Connecting Kit: QC-R001.
    b. McKinney (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

    a. McKinney (MK) - QC-C Series.

2.5 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.

1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
5. Manufacturers:

    a. Rockwood (RO).

B. Coordinators: ANSI/BHMA A156.3 door coordinators consisting of active-leaf, hold-open lever and inactive-leaf release trigger. Model as indicated in hardware sets.

1. Manufacturers:

    a. Rockwood (RO).

C. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.

3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Pulls shall be provided with a 10” clearance from the finished floor on the push side to accommodate wheelchair accessibility.
5. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets. When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
6. Manufacturers:

    a. Rockwood (RO).

2.6 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.
2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
6. Keyway: Manufacturer’s Standard.

C. Keying System: Each type of lock and cylinders to be factory keyed.

1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. New System: Key locks to a new key system as directed by the Owner.

D. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).

E. Construction Keying: Provide construction master keyed cylinders.

F. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.7 KEY CONTROL

P. Electronic Key Management System: Provide an electronic key control system with Stand-alone Plug and Play features including advanced RFID technology. Touchscreen interface with PIN access for keys individually locked in place. Minimum 1,000 system users and 21 iFobs for locking receptors. System shall have a minimum 250,000 audit events screen displayed or ability to be exported via USB port.

1. Manufacturers:

    a. Medeco (MC).

2.8 DEADLOCKS AND LATCHES

A. Cylindrical Deadlocks: ANSI/BHMA A156.36 Grade 2 Certified Products Directory (CPD) deadbolts to fit standard ANSI 161 preparation in functions and with visual status indicators as specified in the hardware sets.

1. Manufacturers:

    a. ASSA ABLOY ACCENTRA (YA) - D200 Series.
    b. Corbin Russwin (RU) - DL2200 Series.
    c. Sargent Manufacturing (SA) - 460 Series.

2.9 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.10 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. Exit devices shall have a five-year warranty.
2. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer’s catalog and template book for specific requirements.
4. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

    a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2” wide stiles.
9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.

1. Electromechanical exit devices shall have the following functions and features:

    a. Universal Molex plug-in connectors that have standardized color-coded wiring and are field configurable in fail safe or fail secure and operate from 12vdc to 24vdc regulated.
    b. EcoFlex or equivalent technology that reduces energy consumption up to 92% as certified by GreenCircle.
    c. Options to be available for request-to-exit or enter signaling, latchbolt and touchbar monitoring.
    d. Field configurable electrified trim to fail-safe or fail-secure that operates from 12-24VDC.

e. Five-year limited warranty for electromechanical features.

2. Manufacturers:

a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
b. Sargent Manufacturing (SA) - 80 Series.

C. Security Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed rim panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be constructed of high grade, heat treated, corrosion resistant nickel steel alloy, and have a full 3/4" throw projection with slide action positive deadlocking.

1. Static Load Force Resistance: Minimum 3000 lbs. certified independent tested.

2. Manufacturers:

a. ASSA ABLOY ACCENTRA (YA) - 7050 Series.
b. Corbin Russwin Hardware (RU) - ED4000S / ED5000S Series.

2.11 SURFACE DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Unitrol): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted closers with door stop mechanism to absorb dead stop shock on arm and top hinge. Hold-open arms to have a spring loaded mechanism in addition to shock absorber assembly. Arms to be provided with rigid steel main arm and secondary arm lengths proportional to the door width.
1. Manufacturers:
a. ASSA ABLOY ACCENTRA (YA) - Unitrol Series.
b. Corbin Russwin Hardware (RU) - Unitrol Series.
c. Norton Rixson (NO) - Unitrol Series.

C. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, institutional grade door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck, closing sweep, and latch speed control valves. Provide non-handed units standard.

1. Manufacturers:

a. ASSA ABLOY ACCENTRA (YA) - 3500 Series.
b. Corbin Russwin Hardware (RU) - DC6000 Series.
c. Norton Rixson (NO) - 8500 Series.
d. Sargent Manufacturing (SA) - 1431 Series.

2.12 ARCHITECTURAL TRIM AND ACCESSORIES

A. Door, Frame and Wall Protective Trim: ANSI/BHMA A156.6, protective products as specified in the hardware sets. Door protection plates shall be not more than 2" less than door width on stop side and 1” less door width on the pull side or on stop side of pairs of doors. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide protective trim with functions and features as follows:

a. Meets ADA requirements for smooth bottom door surfaces.
b. UL Classified options for use on fire-rated doors up to 3 hours.
c. Fabricated from stainless steel, brass, bronze, aluminum, or high-impact plastic.
d. Available in a variety of sizes, finishes, and profiles to suit aesthetic and functional requirements.
e. Designed to protect doors, frames, and adjacent walls from damage due to impact, abrasion, or traffic.
f. Fasteners included; adhesive-backed options available for select models.
g. Ten-year limited warranty.

2. Manufacturers:

a. Rockwood (RO).

2.13 DOOR STOPS AND HOLDERS

A. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:

a. Rockwood (RO).

2.14 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:

1. Pemko (PE).

2.15 ELECTRONIC ACCESSORIES

A. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Manufacturers:

a. Alarm Controls (AK) - CP1-1026 Series.
b. Securitron (SU) - DPS Series.

B. Switching Power Supplies: Provide the least number of power supplies at the appropriate amperage level sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.

1. Power supplies shall meet all functions and features as specified herein.

a. UL listed dual voltage 12 or 24 VDC field selectable continuous output.

b. Tolerates brownout or overvoltage input ± 15% of nominal voltage.
c. Thermal shutdown protection with auto restart.
d. Circuit breaker protection against overcurrent and reverse battery faults.
e. Integrated battery charging circuit to prevent overvoltage on locking devices.
f. Available with a single relay fire trigger or individually triggered relayed outputs.
g. Monitoring options as specified.

2. Manufacturers:

a. Securitron (SU) - AQD Series.

2.16 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.17 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Paint prime coated mullions to match frames.

C. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

D. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

E. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.

F. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

G. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.5 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.6 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.7 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.
2. The supplier is responsible for handing and sizing all products.
3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

B. Manufacturer’s Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. RO - Rockwood
4. YA - ASSA ABLOY ACCENTRA
5. AD - Adams Rite
6. MC - Medeco
7. NO - Norton Rixson
8. SU - Securitron
9. OT - Other

Hardware Sets

Set: 1.0

Doors: 1104A, 1104B, 1104C, 1104D

Description: EXTERIOR HM SGL CARD READER RIM EXIT

1	Continuous Hinge	CFM83HD1 SER12		PE	087100
1	Rim Exit Device, Nightlatch	7100 B MELR 121NL	630	YA	087100
1	Cylinder / Core	Match Facility Key System	26	MC	087100
1	Door Pull	BF157	US32D	RO	087100
1	Surface Closer w/ Hvy Dty Stop	UNI8501	689	NO	087100
1	Kick Plate	K1050 10" x 2" LDW CSK BEV	US32D	RO	087100
1	Gasketing	2891AV		PE	087100
1	Rain Guard	346C + 4" ODW		PE	087100
1	Sweep	345APK		PE	087100
1	Threshold	2715AK		PE	087100
1	ElectroLynx Harness	QC-C x Length Req'd		MK	087100
1	ElectroLynx Harness	QC-C1500P		MK	087100
1	Position Switch	DPS-M-GY		SU	087100
1	Power Supply	AQD2		SU	087100
1	Card Reader	By Others		OT	

Notes: INGRESS VIA PRESENTATION OF VALID CARD/FOB CREDENTIAL OR MECHANICAL KEY OVERRIDE. REQUEST TO EXIT INTEGRATED IN LATCHING HARDWARE. DOOR STATUS MONITORED. FREE EGRESS AT ALL TIMES. OPENING NORMALLY CLOSED AND SECURED.

Set: 9.1

Doors: 1104E, 1104F, 1104R

Description: EXTERIOR HM SGL INSWING STOREROOM FUNCTION CARD READER

1	Continuous Hinge	CFM83HD1		PE	087100
1	Storeroom Lock	AU 5405LN Less Core	626	YA	087100
1	I/C Core	Match Facility Key System	26	MC	087100
1	Surface Closer w/ Hvy Dty Stop	UNI8501	689	NO	087100
1	Kick Plate	K1050 10" x 2" LDW CSK BEV	US32D	RO	087100
1	Gasketing	2891AV		PE	087100
1	Rain Guard	346C + 4" ODW		PE	087100
1	Sweep	345APK		PE	087100
1	Threshold	2715AK		PE	087100
1	ElectroLynx Harness	QC-C x Length Req'd		MK	087100
1	ElectroLynx Harness	QC-C1500P		MK	087100
1	Position Switch	DPS-M-GY		SU	087100
1	Power Supply	AQD2		SU	087100
1	Card Reader	By Others		OT	

Notes: INGRESS VIA PRESENTATION OF VALID CARD/FOB CREDENTIAL OR MECHANICAL KEY OVERRIDE. REQUEST TO EXIT INTEGRATED IN LATCHING HARDWARE. DOOR STATUS MONITORED. FREE EGRESS AT ALL TIMES. OPENING NORMALLY CLOSED AND SECURED.

Set: 17.0

Doors: 1107, 1109

Description: SGL STOREROOM FUNCTION (NO CLOSER) KP

3	Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
1	Storeroom Lock	AU 5405LN Less Core	626	YA	087100
1	I/C Core	Match Facility Key System	26	MC	087100
1	Kick Plate	K1050 10" x 2" LDW CSK BEV	US32D	RO	087100
1	Wall Stop	409	US32D	RO	087100
3	Silencer	608-RKW		RO	087100

Set: 24.0

Doors: 1105, 1106
Description: SGL OFFICE / ENTRY FUNCTION RATED

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
1 Entry Lock	AU 5407LN Less Core	626	YA	087100
1 I/C Core	Match Facility Key System	26	MC	087100
1 Surface Closer (Reg)	8501	689	NO	087100
1 Kick Plate	K1050 10" x 2" LDW CSK BEV	US32D	RO	087100
1 Wall Stop	409	US32D	RO	087100
1 Gasketing	S773BL Head x Jambs		PE	087100

Set: 25.1

Doors: 1108B, 1110
Description: SGL BTB PUSH/PULL INSWING NON-RATED

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
2 Pull Plate	107x70C Mtg-Type 1HD	US32D	RO	087100
1 Surface Closer (Reg)	8501	689	NO	087100
1 Kick Plate	K1050 10" x 2" LDW CSK BEV	US32D	RO	087100
1 Wall Stop	409	US32D	RO	087100
1 Gasketing	S773BL Head x Jambs		PE	087100

Set: 26.1

Doors: 1108A, 1110A
Description: SGL PASSAGE FUNCTION W/OCC IND INSWING CLOSER/STOP

3 Hinge, Full Mortise	TA2714 4-1/2" x 4-1/2"	US26D	MK	087100
1 Deadbolt	D292 V21	626	YA	087100
1 Passage Latch	AU 5401LN	626	YA	087100
1 Surface Closer w/ Hvy Dty Stop	UNI8501	689	NO	087100
1 Gasketing	S773BL Head x Jambs		PE	087100

Set: 29.0

Doors: S1 1104H, S1 1104J, S1 1104K, S1 1104L, S1 1104M, S1 1104N
Description: OVERHEAD / HANGAR / BY OTHERS

1 Balance of Hardware	By Assembly Mfr	OT

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish and install glass specified.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Qualifications of Installers: Provide at least one person thoroughly trained and experienced in skills required, completely familiar with referenced standards and requirements of this work and to personally direct installation performed under this Section.

B. Applicable Standards For Glass and Glazing Work: Conform to the "Manual of Glazing" of the Flat Glass Marketing Association, requirements of Federal Specification DD-G-451c and Safety Standard 16 CFR 1201 of the U.S. Consumer Products Safety Commission.

1.05 PRODUCT HANDLING

A. Protection: Protect glass and glazing materials before, during, and after installation. Protect installed work and materials of other trades.

B. Replacements: In event of damage, immediately make repairs and replacements necessary and at Contractor's expense.

PART 2 - PRODUCTS

2.01 GENERAL QUALITY REQUIREMENTS

A. No manufacturer logos are allowed on any glass. Provide certification to General Contractor that tempered, heat strengthened, annealed, laminated, etc. glass was used where required.

B. Annealed float glass shall comply with ASTM C1036, Type I, Class 1 (clear), Class 2 (tinted), Quality-Q3.

C. Heat-strengthened float glass shall comply with ASTM C1048, TypeI, Class 1 (clear), Class 2 (tinted), Quality Q3, Kind HS.

D. Tempered float glass shall comply with ASTM C1048, Type I, Class 1 (clear), Class 2 (tinted), Quality Q3, Kind FT.

E. IG units consist of glass lites separated by a dehydrated airspace that is hermetically dual sealed with a primary seal of polyisobutylene (PIB) or Thermoplastic Spacer (TPS) a and a secondary seal of an organic sealant.

F. Insulating glass units are certified through the Insulating Glass Certification Council (IGCC) to ASTM E2190.

G. Special Glass Required by Building Code:
1. Provide safety glazing as required by code.
2. Provide heat strengthened glass where required by design pressures, anticipated thermal stress, or use in spandrel areas.
3. Provide fully tempered glass only where safety glazing is mandatory or where pressures exceed capacity of heat strengthened glass.
4. Provide Fire Resistive and/or Fire Protective rated glass where required.

2.02 GLASS AND COATING SCHEDULES

A. Monolithic Glass Schedule:
GL-1 Clear Tempered Float Glass: 1/4" thick unless otherwise shown.

2.03 INSULATING GLASS UNITS

A. Manufacturer is used in this section to refer to a firm that produces primary glass or fabricated glass as defined in the referenced standards.
1. Oldcastle Glass
2. Guardian Industries
3. Pilkington
4. Vitro Industries
5. Visteon Float Glass
6. Approved equal

B. Insulating glass units are certified through the Insulating Glass Certification Council (IGCC) to either ASTM E774, or to ASTM E2190, or both.

C. Insulating glass shall have double edge seals. Primary seal shall be extruded polyisobutylene continuously bonded to glass surfaces and desiccant filled metal spacer, including corners. Minimum width of primary seal shall be 0.125 inch. Secondary seal shall completely cover spacer with no gaps or voids, and shall be continuously bonded to both plates of glass.

D. Insulated Glass Unit Schedule:.

IGU-1. **Tinted/Tempered Assembly:** 1" thick panels consisting of 1/4" clear tempered float glass on interior and 1/4" thick tinted tempered float glass on exterior with 1/2" air space.

1. Guardian SN 68 Gray – Clear, VLT: 34; SHGC: 0.25

2.04 FIRE RATED GLASS

A. Labeling: Permanently label each piece of glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name; test standard; whether glazing is permitted to be used in doors or openings; if permitted in openings, whether or not glazing has passed the hose-stream test; whether or not glazing meets 450 deg F (250 deg C) temperature-rise limitation; and the fire-resistance rating in minutes.

1. Fire-protection-rated glazing required to have a fire-protection rating of 20 minutes shall be exempt from the hose-stream test.

B. Fire Rating: Fire rating listed and labeled by UL for fire rating scheduled at opening locations on drawings, when tested in accordance with the following:

1. Walls: ASTM E119 or UL 263
2. Windows: NFPA 257 or UL 9
3. Doors: NPFA 252 or UL 10B or UL 10C

C. Vision Panels in Doors:

FRG-1 20 minute rating: Fire Protective Rated Tempered Glass, ¼" thickness, and complying with 16 CFR 1201, Category II.

a. Safti First; SuperLite I.
b. Technical Glass Products; Fireglass20.

FRG-2 45 minute or greater rating: Laminated Ceramic Glazing, Laminated glass made from two plies of clear, ceramic glass; 8-mm total thickness; and complying with 16 CFR 1201, Category II.

a. Safti First; Pyran Platinum L
b. Technical Glass Products; FireLite Plus.

D. Sidelights, Transoms and Windows: 1 hour or greater fire resistant rating.

FRG-3 Fire-resistant-rated; and complying with 16 CFR 1201, Category II.

a. Technical Glass Products; Pyrostop.
b. Safti First; SuperLite II-XL

E. Glazing Compound for Fire-rated Glazing Materials:

1. Silicon sealants may NOT be used for any applications.

F. Setting Blocks: Neoprene, EPDM; tested for compatibility with glazing compound; of 70 to 90 Shore A hardness.

G. Cleaners, Primers, and Sealers: Type recommended by manufacturer of glass and gaskets.

2.05 GLAZING ACCESSORIES

A. Provide glazing accessories required to complete glazing work that are compatible with various components of the glazing system(s), and subject to approval of Architect.

B. Glazing gaskets, sealant backers within glazing pockets, shall be black extruded dense silicone.

C. Glazing Tape: Bostik "Chem Tape 60", Pecora "Shim-Seal", or Tremco "Pre-shimmed Tremco 440 Tape".

D. Setting Blocks: Silicone blocks tested for compatibility with specified glazing sealants. Provide side blocks at both jambs, between midheight and top corner of glass, at four-side conventional dry glazed openings. Side blocks are not required where glass is continuously sealed at two or more edges.

E. Compressible Filler Rod: Closed-cell or waterproof-jacketed foam of polyethylene, butyl rubber, neoprene, polyurethane or vinyl, tested for compatibility with specified glazing sealants, of 5 to 10 psi compression strength (25% deflection), recommended by sealant manufacturer for use in glazing channel to prevent sealant exudation from the channel.

PART 3 - EXECUTION

3.01 GLASS SIZES

A. Measure sizes for glass from actual frames, doors and windows. Contract requires glass to be set in place, and Contractor assumes responsibility for correct sizes. Use sizes shown on Drawings for estimating only as approximate dimensions.

3.02 GLAZING SURFACES

A. Glaze only dry surfaces, free from dust or ice. Clean dirty surfaces with cloth saturated with turpentine or mineral spirits before glazing. Remove loose dirt particles and mortar from recesses prior to installation of glass and glazing materials.

3.03 SETTING GLASS

A. Set glass to provide equal bearing for entire width of each pane. Contractor responsible for broken glass due to improper setting. Set using glazing stops furnished by door or fixed framing manufacturer unless otherwise shown or specified. Accurately set glass to fit frame, with all edges smooth. Sharp ragged edges are not acceptable. Cushion glass in fixed interior view windows with felt strips around entire perimeter.

3.04 CLEANING GLASS

A. Contractor shall employ services of a professional window washer at completion of all work to wash glass which has been installed under this contract, removing all stains.

B. Clean glass on both sides after painting operations are complete and dry. Do not use acid solutions or caustic soaps to clean glass.

C. Do not use razor blades to clean glass. Any scratches on the glass caused by the cleaning process will be cause for the removal and replacement of the damaged glass at the Contractor's expense.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Provide metal supports and fastenings, gypsum board, and related accessories specified.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Qualifications of Installers: Use only skilled and experienced gypsum drywall installers. Fully supervise at all times helpers and apprentices used for drywall work with thoroughly skilled gypsum drywall installers.

B. Manufacturers' Recommendations: Manufacturers' recommended use of materials, fastenings, and methods of installation is basis for acceptance or rejection of drywall work where not specifically otherwise shown or detailed.

1.05 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
   1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
   2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

1.06 REFERENCE STANDARDS

A. ASTM E580, Suspension Systems in Areas Requiring Seismic Restraint.

B. ASTM C1396, "Gypsum Wallboard"

C. ASTM C840 Standard Specification for Application and Finishing of Gypsum Board

D. Gypsum Association publications:
   1. GA-214, "Recommended Levels of Gypsum Board Finish"
   2. GA-600, "Fire Resistance Design Manual".
   3. GA-800, "Materials Handling Manual".

1.07 FIRE RESISTANCE RATINGS AND IDENTIFICATION

A. Where gypsum drywall systems with fire resistance ratings are indicated or are required to comply with governing regulations, provide materials and installation methods identical to applicable assemblies which have been tested and listed by recognized authorities, including Underwriters Laboratories, Warnok-Hersey and Factory Mutual.

B. All joints in fire rated gypsum board construction are required to be taped and floated. This includes all joints in concealed and exposed partitions, ceilings and other applications where gypsum board is utilized as a fire barrier. All screws are to be floated over.
   1. Do not use self adhesive Tape at fire rated construction. Provide standard Tape and Drywall Mud.

C. All rated partitions are to extend to the underside of the roof or floor deck above and are to be sealed at the point of intersection with the deck in accordance with requirements of Section 07 8500, Firestopping.

1.08 PRODUCT HANDLING

A. Protection: Protect gypsum drywall materials before, during, and after installation. Protect installed work and materials of other trades.

B. Replacements: In event of damage, immediately make repairs and replacements necessary and at Contractor's expense.

PART 2 - PRODUCTS

2.01 GYPSUM MATERIALS

A. Manufacturers: Use products and materials by the following manufacturers:
   1. United States Gypsum
   2. National Gypsum Company
   3. Georgia-Pacific Company
   4. Temple-Inland, Inc.
   5. CertainTeed Gypsum

B. Gypsum Wallboard: Conform to ASTM C1396, have tapered edges and furnished in largest practical sheet size to minimize number of joints. Provide thickness indicated on Drawings.
   1. Fire Retardant Gypsum Board: Conform to U.L. Design Numbers listed on drawings for type and manufacturer.

C. Mold Resistant Gypsum Board: Provide 5/8" USG - Mold Tough gypsum board, CertainTeed - M2Tech gypsum board, or approved equal complying with ASTM D3273, "Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
   1. To be used at Toilet Room walls (where there is no tile) and at the ceiling.
   2. Fire Retardant Type X where required.

2.02 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:
   1. Interior Gypsum Board: Paper.
   2. Exterior Gypsum Soffit Board: Paper.
   3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
   4. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

2.03 WALL AND PARTITION FRAMING

A. Provide products by Steel Framing Industry Association Members in good standing (listing found at http://www.archtest.com/certification/SFIA_SteelFraming.aspx).

B. Provide type, size, gauge and physical properties as described by the manufacturers load and height tables and in accordance with the current local building code. All section properties shall be calculated in accordance with the AISI Specification for the Design of Cold-Formed Steel Structural Members (latest edition).

C. Runners: Match studs; type recommended by stud manufacturer for floor and ceiling support of studs, and for vertical abutment of drywall work at other work.

D. Install supplementary steel framing, blocking and bracing in the metal framing system wherever walls or partitions are indicated to support work requiring attachment to the wall or partition. Where type of supplementary support is not otherwise indicated, comply with the stud manufacturer's recommendations and industry standards in each case, considering the weight or loading resulting from the item supported.
   1. Screw attach blocking between studs for support of surface mounted items.
      a. Plumbing fixtures.
      b. Toilet partitions.
      c. Wall cabinets.
      d. Toilet accessories

e. Hardware.
f. Architectural woodwork.
g. Grab bars.
h. Handrails and railings.
i. Signage.
j. Other items requiring backing for attachment.

2.04 ACOUSTICAL INSULATION

A. Provide unfaced Owens-Corning EcoTouch™ QuietZone® PINK™ FIBERGLAS® Acoustic Batt Insulation, or approved equal complying with ASTM C 665, Type I.
1. Combustion Characteristics: Passes ASTM E136.
2. Flame Spread and Smoke Development: ASTM E84 <25/<50
3. Fire Resistance Ratings: Part of ASTM E119 fire tested wall assemblies; or UL File #BKNV 3576 (Fire rated assemblies)

2.05 FASTENERS

A. Drywall Screws: Self-drilling type, 1" long for single layer application of gypsum board to metal studs and furring channels and of longer length for multiple layer installation.

B. Powder-Actuated Fasteners: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.

2.06 ACCESSORIES

A. Corner Beads: 0.014 inch thick, hot dip galvanized steel with 1" flanges with 1/16" radius nose with large openings in flange similar to 5/8" diameter holes 7/8" on center.

B. Control and Expansion Joints: "Sheetrock" zinc control joint No.093 by USG, or approved equal. Provide safing and/or acoustical insulation behind control joints as required for adjacent partition construction. Use fire rated control joints in partitions requiring a fire rating.

PART 3 - EXECUTION

3.01 GENERAL PROVISIONS

A. Comply with specified requirements, manufacturer's instructions and recommendations, and referenced standards.

B. In cold weather, heat building to provide uniform temperature of 50 to 70 and provide ventilation to eliminate excess moisture.

C. Deliver materials to job in original unopened containers or bundles and store protected from damage and exposure to the elements.

D. Provide casing beads where edges of gypsum board meet dissimilar materials.

E. Cooperate with carpenters in placing of backing and blocking required for millwork, fixtures, fittings, and accessories.

F. Make cut-outs in panels for pipes, fixtures and small openings. Make holes and cut-outs by method that will not fracture wallboard core or tear covering. Cut holes with accuracy so plates, escutcheons and trim cover edges.

G. Seal cut edges, holes, and areas where wallboard covering is broken, with resistant sealer.

H. Install trim in strict accordance with manufacturers' recommendations. Install trim plumb, level, and true to line with firm attachment to supporting members.

I. At any change in direction of gypsum board, provide sufficient auxiliary framing, blocking or nailers to allow secure attachment along every edge of every individual piece of gypsum board. Do not leave any loose edges.

3.02 INSTALLATION OF METAL SUPPORT SYSTEMS

A. Do not bridge building expansion joints with support system, frame both sides of joints with furring and other support as indicated.

B. Ceiling Support Suspension System: Install in accordance with manufacturers recommendations.

C. Wall/Partition Support System
   1. Install supplementary framing, blocking and bracing to support fixtures, equipment, services, heavy trim, furnishings and similar work which cannot be adequately supported on gypsum board alone.
   2. Isolate stud system from transfer of structural loading to system, both horizontally and vertically. Provide slip or cushioned type joints to attain lateral support and avoid axial loading.
   3. Do not attach stud system to ductwork, piping, conduit, etc.
   4. Install runners (tracks) at floors, ceiling and structural walls and columns where gypsum drywall stud system abuts other work, except as otherwise indicated.
   5. Extend partition stud system through acoustical ceilings and elsewhere as indicated to the structural support and substrate above the ceiling as indicated. Install angle bracing at 4'0" on center from ceiling runner to structure above.
   6. Frame door openings with vertical studs securely attached by screws at each jamb either directly to frames or to jamb anchor slips on door frame; install runner track sections (for jack studs) at head and secure to jamb studs. Install angle bracing above ceiling to structural in each direction at strike side of door. Double studs at all door openings.
   7. Provide runner tracks of same gage as jamb studs. Space jack studs same as partition studs.

8. Frame openings other than door openings in same manner as required for door openings; and install framing below sills of openings to match framing required above door heads. Opening for ductwork, piping must allow clearance for insulation, dampers, etc.
9. Install wall/partition support system to maximum tolerances of 1/8" in 12'-0" measured horizontally and vertically.
10. At rated partitions, provide "5 sided" gypsum board enclosures where items (i.e. toilet accessories, electrical items, fire extinguisher cabinets, etc.) penetrate the surface of the wall, in order to maintain fire resistive integrity of the wall. Provide necessary related blocking.
    a. "5 sided" enclosures may be omitted where metal electrical backboxes not exceeding 16 square inches occur at one side only of a wall within a single stud cavity.
    b. In this case, provide fire stopping material described in Section 07 8500 to completely encompass the back box and its annular space.
    c. If 5 sided gypsum board enclosures are not to be provided at any fire rated partitions, all provisions for installation of electrical boxes in rated partitions as described by Underwriters Laboratories shall be adhered to AND prior approval shall be given in written form by the Architect.
11. Provide "5 sided" enclosures similar to those described above at all penetrations into "sound" partitions and insulated exterior walls regardless of size. The provisions for the omission of the 5 sided enclosures at certain fire rated partitions do not apply to these sound and exterior partitions.

3.03 GENERAL GYPSUM BOARD INSTALLATION REQUIREMENTS

A. Pre-Installation Conference: Meet at the project site with the installers of related work and review the coordination and sequencing of work to ensure that everything to be concealed by gypsum drywall has been accomplished, and that chases, access panels, openings, supplementary framing and blocking and similar provisions have been completed.

B. Install sound attenuation blankets where indicated, prior to gypsum board unless readily installed after board has been installed.

C. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 1'-0" in alternate course of board.

D. Install ceiling boards in the direction and manner which will minimize the number of end-butt joints, and which will avoid end joints in the central area of each ceiling. Stagger end joints at least 1'-0".

E. Install wall/partition boards vertically to avoid end-butt joints wherever possible. At stairwells and similar high walls, install boards horizontally with end joints staggered over studs. Do not butt boards to concrete floor. Maintain a minimum 1/4" to a maximum 3/8" space between bottom of board and concrete.

F. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch open space between boards. Do not force into place.

G. Locate either edge or end joints over supports, except in horizontal applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

H. Attach gypsum board to framing and blocking as required for additional support at openings and cutouts. Space between recessed boxes and cut edges shall not exceed 1/8 inches.

I. Form control joints and expansion joints with space between edges of boards, prepared to receive trim accessories described below in article entitled "INSTALLATION OF DRYWALL TRIM ACCESSORIES".

J. Cover both faces of partition framing with gypsum board in concealed spaces (above ceilings, etc.) except in chase wall which are braced internally.

K. Space fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations, except as otherwise indicated.

3.04 METHODS OF GYPSUM BOARD APPLICATION

A. On ceilings:
   1. Apply gypsum board prior to wall/partition board application to the greatest extend possible. For single-ply construction, use perpendicular application. For two-ply assembles use perpendicular application and apply face ply of gypsum board so that joints of face ply do not occur at joints of base ply with joints over framing members.
   2. Where screws are used, they shall be spaced not more than 12 in. o.c. for ceilings where the framing members are 16 in. o.c.
   3. Screws shall be spaced not more than 12 in. o.c. for ceilings where framing members are 24 in. o.c.
   4. For applications on wood or other applications, refer to Gypsum Association GA-216 for fastener type and spacing.

B. On partitions except shaft wall:
   1. Use maximum length sheets practical to minimize end joints.
   2. When gypsum board is installed parallel to framing members, space fasteners 12 inches on center in field of the board, and 8 inches on center along edges.
   3. For applications on wood or other applications, refer to Gypsum Association GA-216 for fastener type and spacing.
   4. When gypsum board is installed perpendicular to framing members, space fasteners 12 inches (304.8mm) on center in field and along edges.
   5. Stagger screws on abutting edges or ends.

6. For single-ply construction, apply gypsum board with long dimension either parallel or perpendicular to framing members as required to minimize number of joints.
7. For two-ply gypsum board assemblies, apply base ply of gypsum board to assure minimum number of joints in face layer. Apply face ply of wallboard to base ply so that joints of face ply do not occur at joints of base ply with joints over framing members.

3.05 INSTALLATION OF DRYWALL TRIM ACCESSORIES

A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.

B. Install metal corner beads at external corners of drywall work. Corner beads are to be completely bedded and taped.

C. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where semi-finishing type is indicated. Install L-type trim where work is tightly abutted to other work, and install special kerf-type where other work is kerfed to receive long leg of L-type trim. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

D. Install metal control joints where indicated on drawings. If not indicated on drawings, install in accordance with the following:
1. Interior Partitions: Maximum Single Dimension not to exceed 20 feet. Maximum Single Area not to exceed 400 Sq. Ft.
2. Interior Ceiling With Perimeter Relief: Maximum Single Dimension not to exceed 40 feet. Maximum Single Area not to exceed 1,600 Sq.Ft. Install control joint at any change of direction of ceiling framing or support system.
3. Interior Ceiling Without Perimeter Relief: Maximum Single Dimension not to exceed 20 feet. Maximum Single Area not to exceed 400 Sq.Ft. Install control joint at any change of direction of ceiling framing or support system.

3.06 INSTALLING CEILING SUSPENSION SYSTEMS

A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
1. Hangers: 48 inches o.c.
2. Carrying Channels (Main Runners): 48 inches o.c.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:
1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.

2. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
4. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
5. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
6. Do not attach hangers to steel roof deck.
7. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
8. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
9. Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

E. Seismic Bracing: Sway-brace suspension systems with hangers used for support.

F. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

G. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

3.07 JOINT TREATMENT AND FINISHING

A. General: Joint treatment for gypsum board surfaces is also described in Section 09 9000.

B. All joints in gypsum board construction are to be taped and floated. This includes work above ceilings, at concealed places and anywhere else joints in gypsum board construction occur.

1. All screw and/or nail heads are to be floated smooth both above and below ceiling line.

C. Finish Levels:
1. Level 1: At Ceiling plenum areas and concealed areas.
2. Level 2: At surfaces that are substrate for tile.
3. Level 3: At surfaces receiving medium (Orange Peel) or heavy (Knock-Down) texture finishes before painting or heavy wall coverings where lighting conditions are not critical.

4. Level 4 (Typical Finish): At surfaces receiving light (Semi-Smooth) textured finishes before painting or standard wall coverings or satin/eggshell paint or flat paint.

5. Level 5: At surfaces receiving gloss or semigloss enamels and/or other surfaces subject to severe lighting.

3.08 CLEANING UP

A. Do not allow accumulation of scraps and debris arising from work of this Section. Maintain premises in neat and orderly condition at all times. Immediately remove spilled or splashed compound material and all trace of residue from adjoining surfaces.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Definition: Drywall shaft systems include special-purpose assemblies of gypsum boards and metal components designed for erection entirely from one side of shaft.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Industry Standard: Comply with applicable requirements of GA-216 "Application and Finishing of Gypsum Board" by the Gypsum Association, except where more detailed or more stringent requirements are indicated including the recommendations of the manufacturer.

B. Allowable Tolerances: On faces of work exposed in occupied spaces, including stairwells (if any), limit offsets between planes of board faces to 1/8", and limit variation from plumb and location (including warp and bow) to 1/4" in 8'-0".

C. Fire Resistance Ratings: Provide drywall shaft systems which have fire resistance ratings indicated or required to comply with governing regulations, and which are identical in construction in forms of materials and installations to assemblies which have been tested and listed by recognized authorities, including UL.
   1. Comply with FM "Approval Guide" when applicable.
   2. Fire Resistance Rating as indicated on drawings.

D. Corridor partitions, smokestop partitions, horizontal exit partitions, exit enclosures, and fire walls shall be effectively and permanently identified with signs or stenciling in a manner acceptable to the authority having jurisdiction. Such identification shall be above any decorative ceiling and in concealed spaces. Suggested wording shall be approved by the authority having jurisdiction.

E. System Design Loading: Provide drywall shaft systems designed and tested by manufacturer to withstand the following lateral loadings (air pressures), applied continuously and cyclically, for maximum heights of partitions required, within the following deflections limits.
   1. Lateral Loading: As indicated but not less than 10 psf.
   2. Deflection Limit: As indicated but not less than 1/240 of partition height.

F. Sound Transmission Class: Provide drywall shaft systems designed and tested by manufacturer to achieve the following (minimum) STC rating (ASTM E 90).
   1. Rating: As indicated but not less than 35 STC.

1.05 PRODUCT HANDLING

A. Deliver drywall shaft system components and materials in sealed containers and bundles, fully identified with manufacturer's name, brand, type and grade; store in a dry, well ventilated space, protected from the weather, under cover and off the ground.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Provide drywall shaft system components produced by a single manufacturer selected from the following list:
   1. United States Gypsum
   2. National Gypsum Company
   3. Georgia-Pacific Company
   4. Temple-Inland, Inc.

2.02 BASIC SYSTEM MATERIALS

A. General: Except as otherwise indicated or required by governing regulations, provide the manufacturer's standard materials specified in his published product literature for the system and application required.

B. Metal Framing and Furring:
   1. Provide products by Steel Framing Industry Association Members in good standing (listing found at http://www.archtest.com/certification/SFIA_SteelFraming.aspx).
   2. Hot-dip galvanized steel, ASTM A 446, G 90 coating; except comply with ASTM C 645 for 25-gage members, provide electro-galvanized or hot-dip galvanized coating.

C. Gypsum Shaftwall Board: Manufacturer's special gypsum backing board or coreboard, of thickness and type indicated and as required to comply with system performance requirements.

D. Exposed Gypsum Board: ASTM C 36, Type X where required for fire-resistance rating. Long Edge Profile: Standard taper.

E. Drywall Trim Accessories: Provide manufacturer's standard trim accessories of types indicated for drywall work, formed of galvanized steel, with either knurled and perforated or expanded flanges for nailing or stapling, and beaded for concealment of flanges in joint compound. Provide corner beads, L-type edge trim-beads, U-type edge trim-beads, special L-kerf-type edge trim-beads, and one-piece control joint beads.

F. Joint Treatment Materials: ASTM C 475; type recommended by the manufacturer for the application indicated, except as otherwise indicated.
1. Joint Tape: Perforated type.
2. Joint Compound: Ready-mixed vinyl-type for interior use.
3. Grade: 2 separate grades; one specifically for bedding tapes and filling depressions, and one for topping and sanding.
4. Joint Compound: On interior work provide chemical-hardening- type for bedding and filling, ready-mixed vinyl-type or vinyl-type powder for topping.

G. Miscellaneous Materials: Provide auxiliary materials for gypsum drywall work of the type and grade recommended by the manufacturer of the system.
1. Laminating Adhesive: Special adhesive or joint compound specifically recommended for laminating gypsum boards.
2. Gypsum Board Fasteners: Comply with GA-216.

2.03 BASIC SYSTEM DESCRIPTION

A. General Requirements: The following descriptions indicate type of manufacturer's standard systems required; the descriptions are not intended to be comprehensive but to identify a discrete type of system. Provide a complete system, complying with requirements indicated. Modify and supplement manufacturer's standard system to comply with performance requirements, including those of governing regulations. Provide the depth, profile, gage, and anchorage system of metal support members recommended by manufacturer for heights and system design loading criteria indicated; provide runners, stiffeners, braces, and similar framing members required to form a complete system.

B. Cavity Shaftwall Systems: Provide shaftwall assemblies consisting of gypsum shaftwall boards inserted between U-shaped metal floor and ceiling tracks; specially-shaped studs engaged in tracks and fitted between shaftwall boards; and gypsum boards on finished side or sides applied to studs in number of layers, thicknesses and arrangement indicated.
1. Shaftwall Board Thickness: Not less than 1".
2. Stud Shape: I, C-H or double E.
3. Stud Size: As indicated.
4. Room-Side Finish: As indicated on drawings.
5. Shaft-Side Finish: As indicated on drawings.

PART 3 - EXECUTION

3.01 INSTALLATION OF DRYWALL SHAFT SYSTEMS

A. Preparations and Coordination
   1. Pre-Installation Conference: Prior to the start of shaft system installation, meet at the project site with the installers of related work including work requiring openings, chases, frames, access panels, support and similar integrated requirements including interference and conflicts, and coordinate layout and sequencing requirements for proper integration of the work.
   2. Weather Exposure: Do not proceed with the installation of gypsum board until building is sufficiently enclosed and ambient conditions are adequately controlled to prevent moisture and weather deterioration of the work.

B. Installation of Basic System Components
   1. General: Comply with the manufacturer's installation instructions. Comply with recognized industry standards for the installation of both lightgage metal framing and gypsum board, to the extent not specified by manufacturer's instructions. Anchor and fasten materials and components to comply with ratings and performance requirements, and to comply with governing regulations.
   2. Do not bridge building expansion joints with drywall shaft system, frame both sides of joints with furring and other support as indicated.
   3. Install supplementary framing, blocking and bracing to support fixtures, equipment, services, heavy trim, furnishings and similar work which cannot be adequately supported directly on gypsum drywall shaft system.
   4. Isolate shaft system from transfer of structural loading to system, both horizontally and vertically. Provide slip or cushioned type joints to attain lateral support and avoid axial loading. Comply with details shown and with manufacturer's instructions.
   5. Seal perimeter of each section of drywall shaft work where it abuts other work. Install a second bead of acoustical sealant in a location and manner which will prevent dislocation by air pressure differential between shaft and external spaces. Seal joints and penetrations in the work; comply with manufacturer's instructions.

C. Installation of Drywall Trim Accessories
   1. General: Install metal trim accessories where room-side of drywall shaft system is indicated to receive drywall finish (tape and joint compound treatment), including spaces indicated for paint or wall coverings. Nail or staple the flanges of accessories in accordance with manufacturers instructions, and fasten integrally with gypsum board where possible. Apply trim wherever edge of gypsum board would otherwise be exposed or semi-exposed, including terminations of the work, openings in the work, external corners, expansion and control joints and similar edges, both exposed and abutting other work. Miter-cut corners of exposed trim accessories, and spline-reinforce from behind to eliminate offsets and misalignments.
   2. Install L-type trim where board edges abut other work without space or reveal.
   3. Install U-type trim where board edges are indicated for sealant or gasket application, or would otherwise be exposed (special kerf-type where kerf is provided to receive trim).

4. Install J-type semi-finishing trim where shown.
5. Install control-joint trim (beaded type) where indicated.

3.02 INSTALLATION OF DRYWALL FINISHING

A. Where room-side of drywall shaft work is indicated to receive drywall finish, including spaces indicated for paint or wall coverings, provide exposed boards with tapered edges and recessed fastener heads, ready for drywall finishing. Otherwise, for unfinished work, edge profile of exposed boards is Installer's option, except comply with requirements for fire-resistance and STC ratings.

B. Apply treatment at gypsum board joints (both directions), flanges of trim accessories, penetrations, fasteners heads, surface defects and elsewhere as required to prepare work for decoration. Prefill open joints and rounded or beveled edges, using type of compound recommended by manufacturer.
   1. Apply joint tape at joints between gypsum boards, except where a trim accessory is indicated.
   2. Apply joint compound in 3 coats (not including prefill of opening in base), and sand between last 2 coats and after last coat.
   3. Refer to sections on painting, coatings and wall-coverings in Division 9 for decorative finishes to be applied to drywall work.

3.03 PROTECTION OF WORK

A. Installer shall advise Contractor of required procedures for protecting drywall work from damage and deterioration during remainder of construction period.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish and install suspension systems, ceiling boards, panels and tiles, and accessories required for complete installation of acoustical ceilings specified.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 APPLICABLE STANDARDS

A. American Society for Testing and Materials:
   1. ASTM C 635, "Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings".
   2. ASTM C 636, "Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels".
   3. ASTM E 84, "Surface Burning Characteristics of Building Materials".
   4. ASTM E 580, "Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint"
   5. International Building Code, Section 16, Suspended Ceilings (Seismic Restraint)

1.05 SEISMIC RESTRAINT REQUIREMENTS

A. Based upon seismic design analysis described in IBC. Refer to Code Data for Seismic Category.

B. Category D or E or F: Installation must conform to CISCA recommendations for areas subject to severe seismic activity. IBC categories D, E and F must also meet these additional requirements:
   1. Minimum 2" wall molding
   2. Grid must be attached to two adjacent walls – opposite walls must have a 3/4" clearance
   3. Ends of main beams and cross tees must be tied together to prevent their spreading

4. Heavy-duty grid system
5. Ceiling areas over 1,000 SF must have horizontal restraint wire or rigid bracing
6. Ceiling areas over 2,500 SF must have seismic separation joints or full height partitions
7. Ceilings without rigid bracing must have 2" oversized trim rings for sprinklers and other penetrations Changes in ceiling plane must have positive bracing
8. Cable trays and electrical conduits must be independently supported and braced
9. Suspended ceilings will be subject to special inspection
10. Perimeter support wires within 8"

1.06 PRODUCT HANDLING

A. Protection: Protect suspended acoustical ceiling materials before, during, and after installation. Protect installed work and materials of other trades.

B. Replacements: In event of damage, immediately make repairs and replacements necessary and at Contractor's expense.

1.07 EXTRA MATERIALS

A. Deliver extra materials to Owner. Furnish extra materials, totaling 3% of the total installed, matching products installed as described below, packaged with protective covering for storage and identified with labels clearly describing contents.

PART 2 - PRODUCTS

2.01 SUSPENSION SYSTEMS

A. Provide steel capped, 15/16" exposed tee grid by Armstrong World Industries, USG Interiors or Celotex.

B. Suspension Members: Intermediate or heavy duty type of sufficient strength and rigidity to carry acoustical ceiling units in true and level plane without exceeding 1/32" deflection in any 2 feet of their spans.

C. Fabrication: Fabricate suspension system components from cold-rolled sheet steel conforming to ASTM A 366. Protect from rust and corrosion with hot dipped galvanized coating.

D. Finish for Exposed Members: Factory applied, white, low-gloss, baked-enamel finish. Suspend main suspension system runners from overhead construction members with not less than 12 gauge galvanized steel wire conforming to Federal Specification QQ-W-461.

2.02 ACOUSTICAL TILE

A. Acoustic Ceiling Tile, Standard (C1)
Manufacturer: USG
Item #: 2310
Tile Size: 24” x 48” x 5/8”

Tile: Radar Square Lay-In
Grid: 15/16” DONN DX
Color: White

B. Acoustic Ceiling Tile, Vinyl Faced (C2)
Manufacturer: USG
Item #: 56060
Tile Size: 24” x 48” x 5/8”
Tile: Clean Room Square Lay-In
Grid: 15/16” DONN DX
Color: White

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

A. Examine surfaces and conditions affecting proper installation of acoustical materials. Do not proceed until unsatisfactory conditions are corrected.

B. Do not start acoustical ceiling work until glazing is completed and exterior openings are enclosed.

C. All wet work, including concrete and masonry work must be completed and dried out before work is started.

D. Do not install acoustical materials unless uniform temperature in spaces where acoustical tile work is performed is at least 60E F. during and after installation.

E. Install acoustical ceilings, complete, including component parts necessary to suspend systems from structure.

F. Install suspension systems to permit border units of greatest possible size where not full size.

G. Following installation, clean soiled and discolored surfaces. Remove and replace units damaged or improperly installed.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish and install base specified.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver base and installation accessories to Project site in original manufacturer's unopened cartons and containers each bearing names of product and manufacturer, Project identification, and shipping and handling instructions.

B. Store in dry spaces protected from the weather with ambient temperatures maintained between 50 deg F (10 deg C) and 90 deg F (32 deg C).

C. Store materials on flat surfaces. Move base and installation accessories into spaces where they will be installed at least 48 hours in advance of installation.

1.05 PROJECT CONDITIONS

A. Maintain a minimum temperature of 70 deg F (21 deg C) in spaces for at least 48 hours prior to installation, during installation, and for not less than 48 hours after installation. After this period, maintain a temperature of not less than 55 deg F (13 deg C).

B. Do not install base until it is at the same temperature as the space where it is to be installed.

C. Close spaces to traffic during installation.

1.06 EXTRA MATERIALS

A. Deliver extra materials to Owner. Furnish extra materials, totaling 3% of the total installed, matching products installed as described below, packaged with protective covering for storage and identified with labels clearly describing contents.

PART 2 - PRODUCTS

2.01 RUBBER BASE

A. RB1: Cove Base-- Roppe 40C73P123 1/8” Cove Base, color Charcoal

2.02 INSTALLATION ACCESSORIES

A. Adhesives (Cements): Water-resistant type recommended by manufacturer to suit products and substrate conditions indicated.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas where installation will occur, with Installer present, to verify that substrates and conditions are satisfactory for installation and comply with manufacturer's requirements and those specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Do not stretch resilient base during installation.

F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

G. Preformed Corners: Install preformed corners before installing straight pieces.

H. Job-Formed Corners:
   1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 4 inches in length.
      a. Form without producing discoloration (whitening) at bends.
   2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 4 inches in length.
      a. Miter or cope corners to minimize open joints.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish and install specified carpet, including accessories required for complete and proper installation. Clean and protect installed carpet.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Qualifications of Installers: Use only thoroughly trained and experienced carpet installers completely familiar with materials specified, manufacturer's recommended methods of installation, and requirements of this work.

B. Manufacturer's Recommendations: Manufacturer's recommended methods of installation is basis for methods of installation used in this work.

C. Applicable Standards:
1. ASTM E 648, "Standard Method of Test for Critical Radiant Flux of Floor Covering Systems using a Radiant Heat Source", (GSA-372). Minimum of .25 Watts/cm^2.
2. Carpet and Rug Institute (CRI) "Carpet Specifiers Handbook".

1.05 MOISTURE SLAB TEST

A. One of the following three methods shall be used to determine moisture content of slab at time of application.

B. Using a Tramax concrete moisture detection device, firmly apply the test apparatus to concrete that has had sealers or other subsequent coatings removed. The readings shall be 4.2% or less. If readings are higher, use ASTM F- 2170 for non conditioned spaces and/or ASTM F1869 for conditioned spaces.

C. ASTM F-2170 in situ Relative Humidity Test. Follow test procedures of manufacturer of testing equipment. Reading should be below 75%. If above 75%, use the next test method below.

D. ASTM F-1869 Calcium Chloride Moisture Vapor Transmission Test. Follow test procedures of manufacturer of testing equipment. Results should be below 3 lbs/1,000 square feet/24 hours. (This test is valid only for conditioned spaces.)

1.06 PREINSTALLATION CONFERENCE

A. Conduct conference at Project site and give Architect a minimum of (7) days advance notice.

B. Required attendees: Architect, Material Installer and Supplier, Manufacturer's Representative.

C. Review methods and procedures related to flooring installation including, but not limited to, the following:
   1. Review delivery, storage, and handling procedures.
   2. Review ambient conditions and ventilation procedures.
   3. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
   4. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   5. Review special designs and patterns.
   6. Review specified installation methods and ensure manufacturer's instructions are being followed.

1.07 WARRANTY

A. Carpet manufacturer to guarantee in writing, his goods for period of 2 years against defective workmanship and materials. Carpeting subcontractor to guarantee remaining materials and equipment to comply with requirements of Contract documents for period of 2 years, and agrees to promptly and without charge, make changes, replacements and corrections required to correct defects in design, material, or workmanship developing in materials or equipment under its intended use.

B. Carpeting subcontractor also, at his expense, shall promptly and properly replace improper work within 2 years after final approval as evidenced by date of final payment. Carpeting contractor will receive no compensation for loss in replacement of goods or workmanship. Foregoing two-year absolute guaranty and warranty does not in any way limit, restrict, or affect liability of Contractor, or his subcontractors for indemnity provided for in this Contract, nor does it in any way shorten limitation period fixed by law for filing any action against Contractor for enforcement or for breach of Contract.

PART 2 - PRODUCTS

2.01 CARPET

A. Carpet Tiles-- J&J Tempo Style 7023M, color 1756, 24”x24”

2.03 MATERIAL TOLERANCES

A. Final manufactured carpeting, all types, subject to following tolerances:
   1. Five percent (plus or minus) variation in basic raw materials, pile height and weight.
   2. Transverse and longitudinal rows perpendicular to each other with no tolerance allowed that causes uneven or bowed cross seams visible to the naked eye.

2.04 CARPET ACCESSORIES

A. Carpet Edge Guard and/or Transition Strip: Carpet edge guards and transition strips of types, sizes and profiles required. Submit color choices to Architect for selection of finish color.

B. Installation Adhesive: Water-resistant type recommended by carpet or cushion manufacturer, and complying with flammability requirements for installed carpet.

C. Seaming Cement: Hot melt seaming adhesive or similar product recommended by carpet manufacturer, for taping seams and buttering cut edges at backing to form secure seams and prevent pile loss at seams.

D. Trowelable Underlayment: Where carpet transitions up to other floor covering, provide trowelable underlayment material in thickness required sloping down to feather edge at 1/8" +/- per foot slope.

PART 3 - EXECUTION

3.01 MEASUREMENTS

A. Dimensions for carpet areas are approximate. Carefully check dimensions and other conditions affecting this work in the field. Contractor responsible for proper installation of carpet in areas designated.

3.02 PRE-INSTALLATION REQUIREMENTS

A. Installer must examine substrates for moisture content and other conditions under which carpeting is installed, and notify Contractor in writing of conditions detrimental to proper completion of this work. Do not proceed until unsatisfactory conditions are corrected.

   1. Floor preparation shall be free of cracks and holes. Gaps of 1/16" or more are to be filled with latex base flashing compound.
   2. Floor temperature should be at 65E at least 24 hours prior to installation and 48 hours after carpet is installed.

B. Clear debris and scrape up cementitious deposits from surfaces to receive carpeting. Vacuum clean immediately before installation. Check concrete surfaces to ensure no "dusting" results through installed carpet. Apply sealer when required to prevent dusting.

C. Sequence carpeting with other work to minimize possibility of damaging and soiling carpet during remainder of construction period.

3.03 INSTALLATION, GENERAL

A. Comply with CRI 104, Section 14 "Carpet Modules" for carpet tile, and with manufacturer's recommendations and final shop drawings for installation.

B. Extend carpet and carpet tile under open-bottomed obstructions and under removable flanges and furnishings, and into alcoves and closets of each space.

C. Provide cut-outs where required, and bind cut edges properly where not concealed by protective edge guards or overlapping flanges.

D. Coordinate installation with installation of edge/transition treatment.

E. Maintain dye lot integrity. Do not mix dye lots in same area.

3.04 CARPET TILE INSTALLATION

A. Comply with manufacturer's instructions and final shop drawings.

B. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edging, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.

C. Install in installation method scheduled using releasable adhesive.

D. Transition Strips: Place strips tightly butted and secured to flooring with adhesive

3.05 PROTECTION AND CLEANING OF CARPETING

A. Adequately cover and protect against damage during shipment and delivery to job site, and until acceptance by Owner.

B. Protect during installation using drop cloths, or heavy, reinforced, non-staining Kraft paper.

C. Damaged carpeting will be rejected and replaced by Contractor.

D. At completion of work and when directed by Owner, vacuum clean carpet and remove soiling.

E. Install protective covering over carpet.

3.06 MAINTENANCE

A. Submit 2 copies of complete manual of manufacturer's maintenance recommendations for each type carpet specified.

3.07 ATTIC STOCK

A. Modular Attic Stock: 3 percent of job required yardage of each carpet.

B. Package attic stock pieces in wrapping suitable for storage, clearly labeled and marked as to construction quality, color, and sizes. Place in orderly manner in areas designated by Owner.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Provide specified painting and finishing of interior and exterior items.
   1. **Do not paint** over any code required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates. Mask off the label before applying finish and remove masking after finish is dry.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Product Data: For each type of product. Include preparation requirements and application instructions.

C. Color Samples: For each type of paint system and in each color and gloss of topcoat. This is required for final color verification. DO NOT proceed with paint application until all colors have received final approval.
   1. Submit Samples on rigid backing, 8 inches square minimum.
   2. Step coats on Samples to show each coat required for system.
   3. Label each coat of each Sample.
   4. Label each Sample for location and application area.

D. Substitutions will not be considered prior to the award of the General Contract.

1.04 DEFINITIONS

A. Term "paint", as used herein, includes enamels, paints, sealers, fillers, emulsions, varnishes, stains, and other coatings whether used as prime, intermediate, or finish coats.

1.05 QUALITY ASSURANCE

A. Qualifications of Painters: Use only qualified journeyman painters for mixing and application of paint. In acceptance or rejection of painting, no allowance made for lack of skill on part of painters.

1.06 PRODUCT HANDLING

A. Delivery: Deliver paint materials to job site in original unopened containers with labels intact and legible at time of use.

B. Protection:
   1. Store only approved materials at job site and store only in suitable and designated area restricted to storage of paint materials and related equipment.
   2. Ensure safe storage and use of paint materials and prompt and safe disposal of waste.
   3. Protect paint materials before, during, and after application and protect installed work and materials of other trades.

PART 2 - PRODUCTS

2.01 PAINT MATERIALS

A. Manufacturers: PPG or Sherwin Williams

B. Compatibility:
   1. Paint materials and equipment to be compatible. Finish coats compatible with prime coats, prime coats compatible with surface to be coated, and tools and equipment compatible with coating applied.
   2. Thinners (when used): Use thinners recommended for that purpose by manufacturer of material thinned.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection: Carefully inspect installed work of other trades and verify work is complete to point where painting work may properly commence. Verify paint finishes may be applied in strict accordance with manufacturer's directions and requirements of these Specifications.

B. Discrepancies: Do not proceed with installation in areas of discrepancy until discrepancies are fully resolved.

3.02 PREPARATION OF SURFACES

A. Protection: Completely mask, remove, and adequately protect hardware, accessories, machined surfaces, plates, lighting fixtures, and similar items in contact with painted surfaces not scheduled to receive paint.

B. Priming: Use primer recommended by manufacturer of coating system. Spot prime exposed nails and metals to be painted with emulsion paints.

C. Cleaning: Thoroughly clean surfaces receiving paint. Schedule cleaning and painting so dust and contaminants from cleaning process will not fall on wet, newly painted surfaces.

D. Gypsum Board: Treat and conceal joints, screwheads, and depressions in gypsum board surface in accordance with manufacturer's recommendations and instructions. Painted surfaces must be completely clean and continuously smooth. Treat internal and exterior corners and angles formed by intersection of wallboard surfaces and wallboard edges with joint reinforcements system in accordance with manufacturer's standard installation specifications where intersections and edges do not have metal trim. **All joints in gypsum board construction are to be taped and floated. This includes work above ceilings, at concealed places and anywhere else joints in gypsum board construction occur.** A slight egg-shell texture may be acceptable if approved by Architect prior to application. Heavy "knockdown" texturing is not acceptable.

E. Primed Ferrous Metals: Clean ferrous metals free of dust, grease and grime. Sand smooth rust spots, mars and abrasions in surfaces. Touch-up shop-applied prime coats which have damage or bare areas. Wire-brush, solvent clean, and touch up with same primer as shop coat.

F. Galvanized Metal Surfaces: Clean free of oil and surface contaminates with acceptable non-petroleum based solvent. Touch up bare metal with zinc chromate primer.

3.03 WORKMANSHIP

A. Do not perform outside painting in extremely cold, frosty, or damp weather. Do not paint in dusty rooms. If required, sprinkle floors, to lay dust. Do not apply coats of paint on either wet or damp surfaces and in no case unless preceding coat is dry and hard.

B. Clean surfaces before priming. Remove dirt, oil, grease, rust, scale, and foreign matter. Clean with sandpaper, steel scraper, or wire brushes where necessary.

C. Specified coats are to cover completed painting and finishing work. Where color, stain, or undercoats show through final coat, install additional coats until uniform coverage is obtained.

D. Vary tints of undercoats slightly for identification of succeeding coats. Ample time of drying required to secure best possible results.

E. At all accent paint locations, contractor to mock-up approximately 3’-0” x 3’-0” color swatch, with final approval of color pending client walk-through.

F. Coats specified are in addition to shop or mill priming required under other Sections of these specifications.

G. All cabinet devices that require finish painting are to be painted with doors in the open position and shall be allowed to dry for a minimum of 24 hours in the open position. DO NOT PAINT DOORS CLOSED AND TRIM AFTER DRYING.

1. Cabinets that require finish painting include, but are not limited to, wall and ceiling access doors, fire extinguisher/hose/valve cabinets, electrical panel boxes, etc.

H. Corridor partitions, smokestop partitions, horizontal exit partitions, exit enclosures, and fire walls shall be effectively and permanently identified with signs or stenciling in a manner acceptable to the authority having jurisdiction. Label each wall at 20'-0" maximum. Such identification shall be above any decorative ceiling and in concealed spaces. Approved wording is to be:

FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS

3.04 PAINT SCHEDULE

A. Finish surfaces as follows:

	SURFACE	TREATMENT
1.	**Exterior Ferrous Metals:** **Not Factory Galvanized:**	1st Coat – PPG AquaPon Zinc Rich Primer 97-670 2nd & 3rd Coats – PPG Pitt Tech Plus 90-1110 Series
2.	**Galvanized Metal:** (Includes exposed galvanized Structural steel, lintels, railings, stairs, doors and frames at interior and exterior)	1st Coat – PPG Pitt Tech Plus 4020 Series (Touch up only on primed surfaces) 2nd & 3rd Coats – PPG Pitt Tech Plus DTM 90-1110
3.	**Interior Ferrous Metals:** **Not Factory Galvanized:**	1st Coat – PPG Pitt Tech Plus Series (Touch up only on primed surfaces) 2nd & 3rd Coats –PPG PittTech Plus Industrial Acrylic 90-1110
4.	**Int. Gyp. Board - Painted:**	1st Coat – PPG SpeedHide Zero VOC Latex Primer 6-2 2nd & 3rd Coats – PPG SpeedHide Zero VOC Latex .
5.	**Int. Gyp. Board - Glazecoat:**	1st Coat – PPG SpeedHide Zero VOC Latex Primer 6-2 2nd & 3rd Coats – PPG Pitt Glaze PreCatalyzed Waterbased Semi-Gloss Epoxy 16-510

B. Color Schedule: **COLOR MATCH to PPG**
General Walls: SW7636 Satin
Accent Walls: SW9178 239-C5
Warehouse Walls: SW7636 Satin
Bathroom Walls: SW7636 Satin
Trim and Doors: Benjamin Moore Timberwolf 2126-50 Semi-gloss

3.05 PAINTING OF MECHANICAL AND ELECTRICAL WORK

A. Painting of pipe and duct insulation and uncoated ferrous metal in inaccessible pipe and duct chases, in plumbing chases, and in spaces above ceiling is not required.

B. Metal Work in Mechanical Room (finish as follows):
   1. Clean prefinished equipment and touch up with enamel to match manufacturer's final coat.
   2. Clean exposed pipe, exposed conduit and electric outlet boxes, hangers and brackets, valve handles, and miscellaneous pipe line devices and give two coats of medium gray enamel.
   3. Clean prime painted or unfinished items of manufactured mechanical and electrical equipment, then prime and finish with two coats of enamel to match other finished items of equipment.
   4. Finish remaining exposed metal items with two coats of light grey enamel.

C. Paint exposed interior metal work, including ferrous and non-ferrous piping, for heating ventilating, plumbing and electrical equipment, electric cabinets, ventilating grilles, metal access panels. Give exposed metal items one coat of enamel undercoater and one coat of enamel in addition to priming coat.

D. Give pipe and duct insulation exposed to view one coat glue size and two coats enamel.

E. Paint all mechanical, electrical and plumbing items that are visible through registers, grilles and diffusers with Flat Black-Out paint.

3.06 PROTECTION, CLEAN UP, AND TOUCH-UP

A. Protect all work from paint droppings and spattering by use of masking, drop cloths, removal of items or by other approved methods.

B. Upon completion, clean paint drops and smears from hardware, glass and other surfaces and items.

C. Before final inspection, touch-up or refinish painted surfaces which have become damaged or discolored.
   1. Perform touch-up work in a manner to produce solid even color and finish texture to match surrounding color and finish texture.
   2. Areas that receive touch-up work and do not match surrounding color or finish texture will be refinished at Contractors expense.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish and install toilet partitions and urinal screens.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Use personnel skilled in work required, completely familiar with manufacturer's recommended methods of installation, and thoroughly familiar with requirements of this work.

1.05 PRODUCT HANDLING

A. Protection: Protect toilet partitions and other items under this Section before, during, and after installation. Protect installed work and materials of other trades.

B. Replacements: In event of damage, immediately make repairs and replacements necessary at Contractor's expense.

PART 2 - PRODUCTS

2.01 STAINLESS STEEL TOILET PARTITIONS AND URINAL SCREENS

A. Products from one of the following manufacturers will be accepted:
1. General Partitions
2. Global Partitions
3. Accurate Partitions
4. Bradley
5. Bobrick

B. Type: Floor Mounted, Overhead Braced

C. Doors: 1" thick with two sheets of 22 gauge, 304 18-8 stainless steel enclosing sound-deadening honeycomb core. All formed edges shall be welded every 18" and sealed with a surrounding oval-crown lock strip, mitered, welded and finished at the corners. Standard door size, other than "handicapped," is 24".

D. Panels: 1" thick with two sheets of 22 gauge, 304 18-8 stainless steel enclosing sound-deadening honeycomb core. All formed edges shall be welded every 18" and sealed with a surrounding oval-crown lock strip, mitered, welded and finished at the corners.

E. Pilasters: 1-1/4" thick with two sheets of 22 gauge, 304 18-8 stainless steel welded and finished as specified for Stainless doors.
   1. Pilaster bases shall be attached with floor stirrups and leveling bolts to secure for anchorage. Pilaster tops shall be overhead braced the full perimeter of the installation with 1" x 1-1/2" anodized aluminum anti-grip headrail bracing.

F. Hardware:
   1. Top hinge pin shall be secured at three points with all chrome-plated doors hinge fittings fully flush with face plates of the door.
   2. Each door shall be equipped with chrome-plated cast alloy bumper. Concealed latch with bolt of stainless steel permitting exterior access, a one piece chrome-plated stop and keeper and concealed controlled power bearing gravity hinge.
   3. The door shall be adjustable to permit rest position at any angle within a 270E arc and the weight at all times shall be carried by a power bearing with all moving parts concealed within the door thickness.
   4. Pilaster hinge brackets shall be chrome-plated Zamac alloy and thru-bolted to the pilaster.
   5. Floor connections shall be concealed with a one piece 304 stainless steel theft-proof plinth.
   6. Mounting Brackets:
      a. At Partition to Wall Connections: Provide stainless steel continuous bracket. Type 304 stainless steel, No.4 satin finish, with stainless steel theft-resistant barrel nuts and machine screws of same material and finish.
      b. At Partition to Partition Connections: Provide manufacturer’s standard “U” or “F” style. Type 304 stainless steel, No.4 satin finish, with stainless steel theft-resistant barrel nuts and machine screws of same material and finish.
   7. Coat Hook/Bumper: Combination type, chrome plated Zamak installed on inside face of each stall door.

G. Finish: All stainless steel units shall be #4 finish and shall be paper covered for protection during shipment and installation.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection: Prior to work of this section, carefully inspect installed work of other trades and verify that work is complete to point where this installation may properly commence.

B. Discrepancies: Do not proceed with installation in areas of discrepancy until discrepancies are fully resolved.

3.02 INSTALLATION

A. Install toilet partitions and other items specified in this Section, anchoring components firmly in place for long life under hard use and in complete accordance with manufacturer's recommendations.

3.03 INSPECTION AND ADJUSTMENT

A. Upon completion of installation and as a condition of acceptance, visually inspect entire work of this section, adjust components for proper operation and straight alignment, and touch-up scratches and abrasions to be completely invisible.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Firefighting devices consist of hand-portable fire extinguishers and metal cabinets.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 PRODUCT HANDLING

A. Protection: Protect firefighting devices before, during, and after installation. Protect installed work and materials of other trades.

B. Replacements: In event of damage, immediately make repairs and replacements necessary at Contractor's expense.

PART 2 - PRODUCTS

2.01 FIRE EXTINGUISHERS

A. Provide multi-purpose, Model MP-10 dry chemical type for Class A, B and C fires with U.L. rating of 4A-80B:C as manufactured by Larsen's Mfg. Co., or approved equal.

2.02 FIRE EXTINGUISHER CABINETS

A. Semi-Recessed Type 1: Construct cabinets from 18 gauge, or heavier, stainless steel with #4 finish. Provide Larsen's Mfg. Co., "Architectural Series" No.SS2409-6R, or approved equal, with "Vertical Duo" doors and black vertical die cut lettering. Mount at 48" to top of handle.

B. Surface Mounted Type 2: Construct cabinets from 18 gauge, or heavier, stainless steel with #4 finish. Provide Larsen's Mfg. Co., "Architectural Series" No.SS2409-SM, or approved equal, with "Vertical Duo" doors and black vertical die cut lettering. Mount at 48" to top of handle. Not scheduled – Use Only If Construction Conditions Dictate.

C. Wall Bracket Type 3: Provide Model 846 for MP10 wall brackets with baked enamel finish as manufactured by Larsen's Mfg. Co., or approved equal.

D. Provide fire rated cabinets if required to be installed in a fire rated wall.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Coordination: Coordinate with other trades to ensure proper and adequate provision in framing and wall covering for installation of recessed cabinets.

B. Inspection:
   1. Prior to installation, inspect cabinet recesses, and verify that necessary provisions have been made.
   2. Do not proceed with installation in areas of discrepancy until discrepancies have been fully resolved.

3.02 INSTALLATION

A. Install firefighting devices in full accordance with pertinent regulations and manufacturer's recommendations.

3.03 SERVICE

A. Determine approximate completion date of Work. Inspect, charge, and tag fire extinguishers at date not more than ten days before or less than one day before actual completion date of the Work.

END OF SECTION

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Work in this section includes furnishing and installation of extruded aluminum overhead canopies.

B. Related Items and Considerations
1. Flashing of various designs may be required. Generic flashing supplied by manufacturer. Specialty flashing to be supplied by installer.
2. Determine wall construction, make-up and thickness.
3. Ensure adequate wall condition to carry canopy loads where required.
4. Consider water drainage away from canopy where necessary.
5. Any necessary removal or relocation of existing structures, obstructions or materials.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Products meeting these specifications established standard of quality required.

1.05 FIELD MEASUREMENT

A. Confirm dimensions prior to preparation of shop drawings when possible.

B. If requested, supply manufacturer s standard literature and specifications for canopies.

C. Submit shop drawings showing structural component locations/positions, material dimensions and details of construction and assembly.

1.06 PERFORMANCE REQUIREMENTS

A. Canopy must conform to local building codes.

B. PE Stamped calculations are not required.

1.07 DELIVER, STORAGE, HANDLING

A. Deliver and store all canopy components in protected areas.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Mapes Canopies, Lincoln, Nebraska, 888-273-1132.

B. Alternate Manufacturer: Ballew's Aluminum Products https://ballews.com, 800-231-6666

2.02 POST SUPPORTED CANOPY

A. Pre-engineered Post Supported Canopy
   1. Deck: Interlocking roll-formed 2 1/2 W style pan (minimum .032 aluminum.)
   2. Intermediate framing members shall be extruded aluminum, alloy 6063-T6, in profile and thickness shown in current Mapes brochures.
   3. Fascia: 8" 'J'

2.03 ROD SUPPORTED CANTILEVER CANOPY

A. Pre-engineered Lumishade hangar rod supported canopy
   1. Deck: Interlocking roll-formed 2 1/2 W style pan (minimum .032 aluminum.)
   2. Intermediate framing members shall be extruded aluminum, alloy 6063-T6, in profile and thickness shown in current Mapes brochures.
   3. Fascia: 8" 'J'

2.04 FINISHES

A. Standard two-coat Kynar color to be selected by Architect to match building color.

2.05 FABRICATION

A. All canopies are to be shipped in preassembled sections.

B. All connections shall be mechanically assembled utilizing 3/16 fasteners with a minimum shear stress of 350 lb. Pre-welded or factory-welded connections are not acceptable.

C. Decking shall be designed with interlocking roll-formed aluminum members.

D. Front Drainage.

PART 3 - EXECUTION

3.01 INSPECTION

A. Confirm that surrounding area is ready for the canopy installation.

B. Installer shall confirm dimensions and elevations to be as shown on drawings provided.

C. Erection shall be performed by an approved installer and scheduled after all concrete, masonry and roofing in the area is completed

3.02 INSTALLATION

A. Install components in strict accordance with manufacturer's instructions and approved shop drawings. Use proper fasteners and hardware for material attachments as specified.

B. Use methods of attachment to structure allowing sufficient adjustment to accommodate tolerances.

C. Remove all protective coverings on panels immediately after installation.

3.03 CLEANING

A. Follow manufacturer's instructions when washing down exposed panel surfaces using a solution of mild detergent in warm water that is applied with soft, clean wiping cloths.

B. Follow strict panel manufacturer guidelines when removing foreign substances from panel surfaces requiring mineral spirits or any solvents that are acceptable for use.

C. Installers shall leave panel system clean at completion of installation. Final cleaning is by others upon completion of project, following manufacturer's cleaning instructions.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Furnish and install metal accessories called for in Toilet Accessory Schedule.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Use personnel skilled in work required, completely familiar with manufacturers' recommended methods of installation, and thoroughly familiar with requirements of this work.

1.05 PRODUCT HANDLING

A. Protection: Protect toilet and bath accessories before, during, and after installation. Protect installed work and materials of other trades.

B. Replacements: In event of damage, immediately make repairs and replacements necessary at Contractor's expense.

PART 2 - PRODUCTS

2.01 METAL TOILET ACCESSORIES

A. Manufacturers and Accessory Numbers are listed in Toilet Accessory Schedule. Manufacturers who may furnish products for review by Architect are: Bobrick, Bradley, McKinney or American Specialties.

2.02 MATERIALS

A. Stainless Steel: AISI Type 302/304, with Brushed finish, 0.034-inch (22-gage) minimum thickness.

B. Brass: Leaded and unleaded, flat products, ASTM B 19; rods, shapes, forgings, and flat products with finished edges, ASTM B 16; Castings, ASTM B 30.

C. Sheet Steel: Cold-rolled, commercial quality ASTM A 366, 0.04-inch (20-gage) minimum. Surface preparation and metal pretreatment as required for applied finish.

D. Galvanized Steel Sheet: ASTM A 527, G60.

E. Chromium Plating: Nickel and chromium electro-deposited on base metal, ASTM B 456, Type SC 2.

2.03 FASTENERS

A. Provide screws, bolts, and other devices of same material as accessory unit, or of galvanized steel where concealed.

2.04 FIBERGLASS REINFORCED WALL PANEL

A. RVS1: Glasteel distributed by ACI Plastics, 501-758-9980

B. Description
Product: Standard FRP
Size: 48” x 120” x 0.090”
Back Surface: Smooth
Front Finish: Smooth
Color: White
Coordinating System Products: PVC Division molding, PVC Inside Corner molding, Stainless Outside Corner Guard

C. Adhesive: 4054 Adhesive as required.

D. Sealant: Clear or White Acrylic Latex Sealant as required. DO NOT USE SILICONE SEALANT

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Coordinate with other trades to ensure proper and adequate provision in framing and wall finish for installation of selected accessories.

B. Prior to installation, inspect location of accessories and verify that necessary provisions have been made. Do not proceed with installation in areas of discrepancy until discrepancies have been fully resolved.

3.02 INSTALLATION

A. Install accessories in accordance with manufacturers' recommendations, anchoring

components firmly in place.

3.03 TOILET ACCESSORY SCHEDULE

TA-1 Toilet Paper Dispenser, OFCI
TA-2 Framed Mirror, Bobrick B290-2436
TA-3 Paper Towel Dispenser, OFCI
TA-4 36” Grab Bar, Bobrick B6806-99-36, 1-1/2” Dia. Non-Slip Grip, Concealed Fastener
TA-5 42” Grab Bar, Bobrick B6206-99-42, 1-1/2” Dia. Non-Slip Grip, Concealed Fastener.
TA-6 18” Grab Bar, Bobrick B6206-99-18, 1-1/2” Dia. Non-Slip Grip, Concealed Fastener.
TA-7 Soap Dispenser, OFCI
TA-8 Sanitary Napkin Disposal
TA-9 Shower Curtain Rod
TA-10 Shower bench, Folding, based on Bobrick B5181
TA-11 Robe Hook, single
TA-12 Mop Holder
TA-13 Waste Receptacle, Free Standing, OFOI

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Provide miscellaneous specialties specified.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Furnish at least one person, present at all times, thoroughly familiar with installation requirements of each item, to personally supervise installation.

1.05 PRODUCT HANDLING

A. Protection: Protect miscellaneous specialty items before, during, and after installation. Protect installed work and materials of other trades.

B. Replacements: In event of damage, immediately make repairs and replacements at Contractor's expense.

PART 2 - PRODUCTS

2.01 SECURITY CAMERAS

A. (2) Verkada CF83-E Outdoor Fisheye Cameras, 12MP, Fixed Lens, 512GB of Storage.

B. (4) Verkada CB53-E Outdoor Bullet Cameras, 256GB, 30 Days Max.

C. Contact:
Stacy Ramm [AR-LROCK] sramm@summitfiresecurity.com
Chris Jeffers chris.jeffers@cts-one.co

2.02 SAFETY BARRIERS

A. Type 1: Global Industrial, 888.978.7759
   1. Steel Lift-Out Guard Rail, Light Duty, 10'L, Yellow
   2. Model #: WB708435

B. Type 2: Wurth
   1. Heartland Engineered Products 42" Protective Double Guard Rail Post
   2. Model #: 7466, Mfr.: C2

C. Refer to drawings for locations, dimensions and layout.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Prior to installation, verify items may be installed in accordance with manufacturers' recommendations.

B. Notify Architect of conditions that would adversely affect installation.

C. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Install miscellaneous specialties in strict accordance with manufacturers' current recommendations and instructions.

3.03 ADJUSTMENT AND CLEANING

A. Verify that trim is in place and adjust components.

B. Remove labels from equipment and remove packing materials from job site.

END OF SECTION

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PART 1 - GENERAL

1.01 SUMMARY

A. Provide window shades and accessories.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.

B. Substitutions will not be considered prior to the award of the General Contract.

1.04 QUALITY ASSURANCE

A. Comply with governing codes/regulations. Provide products of acceptable manufacturers with satisfactory use in similar service for three years. Use experienced installers. Deliver, handle and store materials in accordance with manufacturer's instructions.

1.05 WARRANTY

A. Ten-year warranty on manually operated components, except bead chain which is a maintenance / service item.

B. Ten-year warranty on shade cloth with provision that it will not deteriorate, sag or warp and will remain fit for use for the full warranty period when used as an interior rollershade.

C. Manufacturer to warrant its hardware components to be free from defects in material and workmanship under the normal and proper use for a period of ten (10) years from date of invoice.

PART 2 - PRODUCTS

2.01 MATERIALS AND FABRICATION

A. Manufacturer: MechoShade Systems, Inc., Long Island City, New York 11101, USA.
   1. MechoShade manually operated units.

B. Manual Shade System: Pre-engineered unit with one-piece molded sprockets and a linear disc brake opposed to a flat steel backing plate and concealed variable-adjustment mechanism. Shade mechanism shall be adjustable from 100% friction (static mode) with infinite positions to 15% friction (dynamic mode) with only pre-selected positions. The operator shall be a side-mounted gear and sprocket mechanism located within the drive-end bracket. The shade cloth shall be removable with a snap-on and snap-off mounting (Snap-Loc) spline without having to remove the shade tube.

RS2: Manual Roller Shades
Manufacturer: Mechoshade
Type: Mecho/5
Shadecloth: Ecoveil 1750, Shadow Grey
Fascia Finish: Aluminum

C. Extruded aluminum SnapLoc fascia which continuously fits on the end and center brackets as a one-piece section over two or more shade bands.

PART 3- EXECUTION

3.01 INSTALLATION

A. Take field measurements prior to the fabrication to ensure fit.

B. Install materials and systems in accordance with manufacturer's instructions and approved submittals.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Furnish, deliver, and erect pre-engineered metal building components shown on drawings and conforming to these specifications.

B. Furnish building design of manufacturer regularly engaged in fabrication of pre-engineered structures.

1.02 RELATED DOCUMENTS

A. Applicable portions of the Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to the execution of the Contract, other documents listed in the Agreement and Modifications issued after the execution of the Contract shall apply to this Section. The general requirements for this work are located in Division 1 of the Specifications.

1.03 SUBMITTALS AND SUBSTITUTIONS

A. In accordance with Section 01 3000.
   1. Furnish Shop Drawings, for review by Architect showing necessary fabrication details, fittings, fastenings, foundation reactions for all load cases, anchorage and erection details. In addition to provisions of the General Conditions, prepare Shop Drawings by or under the supervision of a registered professional engineer. Do not use reproductions, in any form, of the Contract Drawings for Shop Drawings. Furnish two prints and one sepia reproducible of Shop Drawings submitted to Architect for review. Submit related shop drawings together; partial submittals will not be accepted. Furnish mill certificates on foreign steel proposed for use and not produced within the continental USA. Include with mill certificates certified copies of mill test reports giving names and locations of mills and shops, and chemical analysis and physical properties of steel required for this project.
   2. All drawings and calculations shall bear the stamp of a structural engineer licensed in the state of Arkansas.

B. Substitutions will not be considered prior to the award of the General Contract.
   1. NO SUBSTITUTIONS will be considered for the listed Metal Building Manufacturers.

C. Submit roofing manufacturer's inspection report after each of the three (3) required warranty inspections. Report must contain the following:
   1. A detailed description of all non-conforming work.
   2. Manufacturer's recommended method of correction.
   3. Color photographic documentation of non-conforming work.
   4. Color photographic documentation of subsequent accepted work.

5. Drawings, Diagrams or Detail furnished by the inspector at the jobsite visit.
6. Instructions and conditions for re-inspection and/or issuance of warranty.

D. Metal Wall Panel Manufacturer will be required to review shop drawings and coordinate with Hangar Door Manufacturer and Translucent Insulating Panel Manufacturer to ensure proper integration of all materials.

1.04 REFERENCE STANDARDS

A. Conform to latest edition of the following standards where applicable to structural design of building:
1. "Recommended Design Practices Manual", Latest Edition - Metal Building Manufacturer's Association.
2. "Manual of Steel Construction", Latest Edition - American Institute of Steel Construction
3. "Cold Formed Steel Design Manual", Latest Edition - American Iron and Steel Institute.
4. "Aluminum Construction Manual", Latest Edition - The Aluminum Association.
5. "Code for Welding in Building Construction", Latest Edition - American Welding Society.

1.05 DESIGN LOADS

A. General: Basic design loads include live, wind, and dead loads. Other loads, whether of static, dynamic, or kinetic nature, are considered auxiliary loads.

B. Refer to Pre-Engineered metal building notes on Structural Drawings for Roof Live Load, Roof Dead Load, Superimposed Roof Dead Load, Roof Deflections, Perimeter Wall Deflections, Drift Under Wind Loading and other loading requirements.

C. Certification:
1. Submit letter from metal building manufacturer certifying that the building proposed will be furnished to meet or exceed all the above design load criteria and that all structural design will be in strict conformance with that prescribed in the MBMA "Design Practices Manual".
2. After awarding of Contract, submit complete structural analysis prepared by metal building manufacturer to Architect upon request for same.

1.06 GUARANTEES

A. Provide manufacturer's guarantee for exterior color finish for a period of 20 years against blistering, peeling, cracking, flaking, checking, chipping and excessive color change and chalking. Color change not to exceed 5 N.B.S. units (per ASTM D-2244.64T) and chalking not less than rating of 8 per ASTM D-659.

B. Roofing Materials Manufacturer: Provide twenty (20) Year, Weathertightness System Warranty. Warranty is to be equivalent to the Varco-Pruden NDL Warranty.

C. Installer:
1. Submit manufacturer's written two (2) year limited warranty providing panels to be free from defects in materials and workmanship, beginning from the date of substantial completion.
2. The installation contractor shall issue a separate two (2) year warranty against defects in installed materials and workmanship, beginning from the date of substantial completion of the installation.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Provide preengineered structural system by or one of the following manufacturers.
1. Varco Pruden
2. American
3. Ceco
4. Butler Manufacturing Co.
5. Red Dot Buildings

2.02 WALL COVERING AND SUPPORTS

A. General: Metal wall panels and manufacturer's listed here are the Basis of Design and establish minimum criteria to be met in case of a proposed substitution. Any other panels or manufacturer's submitted for review by the Architect must meet all performance, warranty, appearance and finish criteria specified.
1. Provide top, bottom, and intermediate panel closures, flashings, fascias, gutters, and trim using building manufacturer's standard components compatible with material furnished as wall panels.
2. Girt Configuration and Thickness: Building manufacturer's standard provided design criteria, including deflection and girt spacing, is met.

B. **METAL WALL PANEL Type WP1:** Basis of Design is Varco Pruden “Rib” panel to match existing.
1. Gauge shall be (24 Ga.) thick, AZ-50 aluminum-zinc coated steel conforming to ASTM A-792, minimum grade 33
2. Finish Color(s) to Match Existing.

C. **METAL WALL LINER PANEL Type LP1:** Basis of Design is Varco-Pruden "LPR-36" exposed fastener wall liner panel.
1. Gauge shall be (28 Ga.) thick, AZ-50 aluminum-zinc coated steel conforming to ASTM A-792, minimum grade 33
2. Finish Color(s) to Match Existing.

2.03 ROOF COVERING, SUPPORTS AND ACCESSORIES

A. General: Metal roof panels and manufacturer's listed here are the Basis of Design and establish minimum criteria to be met in case of a proposed substitution. Any other panels or manufacturer's submitted for review by the Architect must meet all performance, warranty, appearance and finish criteria specified.

1. Provide roof panels of "standing-seam interlocking" design secured to purlins. No thermal contact allowed between roof panels and supporting purlin. Furnish standing seams with factory-applied, nonhardening sealant. Continuously lock or crimp seams together by mechanical means during erection. Roof panels with lap-type side (longitudinal) joints and exposed structural fasteners are not acceptable.
2. Roof Panel Deflection: Maximum L/180 of its span when supporting applicable vertical live loads.
3. Purlins Configuration, Thickness, and Spacing: Use building manufacturer's standard, provided design criteria, including deflection, is met or exceeded.

B. **METAL ROOF PANEL Type RP1:** Basis of Design is SSR Panel by Varco Pruden with UL Class 90 rating and complying with ASTM E1592 Structural performance of sheet metal roof and siding by uniform static air pressure difference.
1. Roof panels to be 24 gauge AZ-50 aluminum-zinc coated steel conforming to ASTM A-792, minimum grade 33
2. Finish Color(s) to Match Existing.

2.04 PAINTED FINISH

A. Finish to be Kynar 500 based polyvinylidene fluoride (PVDF) coating, 70% resin formulation to match existing.
1. Primer is applied to 0.20 - 0.30 mils D.F.T. (Dry Film Thickness) and the topcoat at 1.0 - 1.2 mils D.F.T

2.05 INSULATION

A. Refer to 07 2130 PRE-ENGINEERED BUILDING INSULATION

2.06 FLASHING AND TRIM

A. Flashing at the rake and high eave shall not compromise the integrity of the roof system by constricting movement due to thermal expansion and contraction.

B. Panel manufacturer to supply flexible membranes if applicable.

C. Manufacture all trim and flashing from Galvalume sheet steel to profiles shown.

D. Finish for flashing and trim to be verified with Architect and coordinated with adjacent surfaces.

E. Gutter System:
1. Provide accessories for complete installation including end pieces, caps, elbows, outlet tubes, and basket type strainers.
2. Manufactured from Galvalume sheet steel in minimum 10 foot lengths, tapered and notched to provide a 1" telescoping lap joint. Seal watertight, and secure with 1/8" rivets, or join sections with flat locked soldered seams.

3. Space gutter hangers and braces not more than 36" apart and secure with screws, bolts or approved clips. Brackets to be of compatible material to gutter, with matching finish and color.
4. Slope gutter 1" in 20 feet to down spout to avoid ponding.
5. Make leaders (downspouts) with 1-1/2" telescoped joints or full length without joints. Set leaders plumb, clear of walls. Secure with straps not over 6 feet apart and space so one is near top and another near bottom.

F. Gauge of Metal:
1. Metal components of a roof assembly: 24 gauge (USS .025") minimum
2. Scuppers, guttering, downspouts and splash pans: 26 gauge (USS .0312") minimum. Gutter straps to be 18 gage.
3. Miscellaneous Flashing: 26 gauge minimum

PART 3 - EXECUTION

3.01 GENERAL

A. Deliver and erect the pre-engineered components accessories specified and complying with manufacturer's erection drawings and specifications.

B. Perform assembly and erection by the manufacturer's own crew or by an erector trained and authorized by the manufacturer with the erectors work being inspected and certified by the manufacturer.

3.02 ERECTION

A. Bolt settings and other dimensions shall be held to a tolerance of 1/8-inch±. Use templates or other gaging devices to assure accurate spacing of anchor bolts. Bolt field connections unless otherwise required.
1. Set bases or sill members to obtain uniform bearing. Anchors and anchor bolts for securing members to concrete curb or structural steel sub-frame shall be of black steel, set accurately to templates and of proper size to adequately resist applicable design loads at the base.

B. Wall Panels: Panels shall be applied with configurations shown. Supply panels in single lengths from base to eave with no horizontal joints except at the junction of door units, louver panels, and similar openings. End laps for panels shall be not less than four inches. Walls shall be closed at base and eave, and around doors, frames, louvers, and other similar openings by flashings and/or formed closures to assure adequate weathertightness. Flashing or stops will not be required where weather-closed or approved self-flashing panels are used.

C. Roof Panels: Roof panels shall be applied with configurations running in direction of roof slope. Supply panels with no transverse joints except at junctions for roof openings and at roof ridge. Seal end-laps with roof joint sealant. Roof shall be flashed and/or sealed at ridge, eaves, rakes, projections through roof, and elsewhere as necessary to make roof weather tight. Flashing and/or caulking shall be accomplished in a manner that will assure complete weather-tightness.

D. Fasteners for Securing Roof and Wall Panels: Fastening method, size and spacing shall be as specified. Fasteners shall be non-corrosive and of design that will produce a weathertight connection. Clearly show fasteners and fastening method on shop and erection drawings. Exposed fasteners will not be allowed.

E. Weatherproofing: Joints between exterior pre-engineered metal building components and other adjacent components and materials shall be designed for and shall receive sealing tapes, gaskets, sealant materials, metal flashing and other methods of sealing as required to provide weathertight joints. Color of sealing materials shall match adjacent metal building components.

END OF SECTION