Fayette County

"Where Quality Is a Lifestyle"

PURCHASING DEPARTMENT
140 Stonewall Avenue West, Ste 204
Fayetteville, Georgia 30214
Phone: 770-305-5420
www.fayettecountyga.gov

June 29, 2016

Subject: Invitation for Bids #1144-B Firing Range & Observation Tower

Gentlemen/Ladies:

Fayette County, Georgia is seeking bids from qualified contractors for construction of an Observation Tower and a Firing Range in accordance with the information and specifications contained herein.

A **mandatory** pre-bid conference will be held at 10:00a.m., Wednesday, July 20, 2016 at Fayette County Old Links Golf Course, 340 Hewell Road, Jonesboro, GA 30238. All companies and interested parties are invited and strongly urged to attend. This will be the opportunity to take measurements, pictures, voice all questions, concerns and comments about this Invitation for Bids and have them addressed.

All questions and inquiries concerning this invitation for bids or the specifications shall be addressed to Trina Barwicks, Contract Administrator of Purchasing, in writing to, email address: tbarwicks@fayettecountyga.gov or fax to (770) 719-5515, Monday through Friday excluding holidays from 8:00 a.m. to 5:00 p.m. The telephone number is (770) 305-5420. Any deviations from this procedure for questions or information pertaining to this invitation for bids may result in your bid being rejected.

Your bid should be on the attached pricing sheet. All prices shall be F.O.B. Destination, Fayette County. Be sure to include the **bid number** and **reference** along with your company's name and address on the **sealed** envelope in which the bid is returned.

BID MUST BE SUBMITTED TO:
FAYETTE COUNTY PURCHASING DEPARTMENT
140 STONEWALL AVENUE WEST - SUITE 204
FAYETTEVILLE, GEORGIA 30214
BID #1144-B
REFERENCE: FIRING RANGE & OBSERVATION TOWER

Bids will be received at the above address until 3:00 p.m., Wednesday, August 3, 2016 in the Purchasing Department, Suite 204. Bids will be opened at approximately 3:00 p.m. August 3, 2016. Bids must be signed to be considered. Late bids will not be considered. Faxed bids will not be considered

If this invitation for bids is downloaded from our web site, it is the responsibility of the individual or company that downloads this invitation for bids to continue to check the Fayette County web site for any addenda that might come out for this invitation for bids and is posted on the Fayette County web site. Fayette County shall not be responsible for any information that any individual or company fails to get in an addendum that is posted on the Fayette County web site but is not downloaded. However, if the Fayette County Purchasing Department mails/emails the invitation for bids announcement to a company or individual, we will keep a record of who we mailed/emailed that invitation for bids to and all addenda for that invitation for bids will also be mailed/emailed to those companies or individuals.

****

Bids will be posted on the Fayette County web site within 3 business days after the bid opening.

There is no set time for an award to be made. If an award is not made within 45 days of the bid opening, an update will be posted on the Fayette County website.

If the county awards this bid, once everything has been received by that company and the award has been completed, that information will also be posted on the Fayette County website. Please keep this procedure in mind.

****

Sincerely,

Ted L. Burgess
Director of Purchasing

TLB/tcb

PROJECT MANUAL FOR:

FAYETTE COUNTY TRAINING FACILITY FIRING RANGE/OBSERVATION TOWER

340 HEWELL RD
JONESBORO, GA 30238

PREPARED BY:

ARCHITECT:
K.A. OLDHAM DESIGN, INC.
14 EAST WASHINGTON ST.
NEWNAN, GA 30263
P 770.683.9170

MECHANICAL:
GEORGE ENGINEERING ASSOCIATES, LLC.
405 MILLARD FARMER ROAD SUITE B
NEWNAN, GA 30263
P 770.252.4669

ELECTRICAL:
MADDOX GROUP INC.
9309 SEMINOLE ROAD
JONESBORO, GA 30236
P 770.471.9076

STRUCTURAL:
AUBURN STRUCTURAL DESIGN
2008 JANABROOKE LANE
AUBURN, AL 36830
P 334.826.8040

architecture
interiors
town planning

KAOD
K A Oldham Design, Inc

06.24.16 FOR BID
KAOD PROJECT # 1464.00
Fayette County Invitation to Bid # 1144-B

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GENERAL TERMS AND CONDITIONS

1. **Definitions**: The term "contractor" as used herein and elsewhere in these specifications shall be used synonymously with the term "successful bidder." The term "county" shall mean Fayette County, Georgia.

2. **Binding Offer**: Each bid shall constitute a firm offer that is binding for sixty (60) days from the date of the bid opening, unless the bidder takes exception to this provision in writing.

3. **Bidder's Questions**: The Fayette County Purchasing Department must receive questions about this invitation to bid in writing at least 72 hours before the scheduled bid opening, excluding Saturdays, Sundays, and holidays. The county will post answers to questions and/or other information concerning the invitation to bid in the form of an addendum on the county's website at http://www.fayettecountyga.gov/purchasing/bids_and_proposals.asp. It is the responsibility of the prospective bidder to check the website for any addenda issued for this invitation to bid.

4. **References**: Include with your bid a list of three (3) jobs that your company has done that are of the same or similar nature to the work described in this invitation to bid, on the form provided. Include all information as requested on the form.

5. **Bid Submission:** Submit your bid, along with any addenda issued by the county, in a sealed opaque envelope with the following information written on the outside of the envelope:

    a. The bidder's company name,
    b. The bid number, which is **#1144-B**, and
    c. The "reference" which identifies the bid, which is "**Firing Range & Observation Tower**".

    Mail or deliver one (1) unbound original bid (paperclip or binder clip acceptable, no staples), signed in ink by a company official authorized to make a legal and binding offer, to:

    Fayette County Government
    Purchasing Department
    140 Stonewall Avenue West, Suite 204
    Fayetteville, GA 30214

    Attention: Contracts Administrator

    You may submit bids in person, by U.S. mail, or by a commercial carrier. Do not submit bids by facsimile, e-mail, or other electronic means. Once submitted, all bids become the property of Fayette County.

6. **Bid Preparation Costs**: The bidder shall bear all costs associated with preparing the bid.

7. **Late Bids:** Bids not received by the time and date of the scheduled bid opening will not be considered, unless the delay is a result of action or inaction by the county.

8. **More than One Bid**: Do not submit alternate bids or options, unless requested or authorized by the county in the Invitation to Bid. If a responder submits more than one bid without being requested or authorized to do so, the county may disqualify the bids from that responder, at the county's option.

9. **Bid Corrections or Withdrawals:** The bidder may correct a mistake, or withdraw a bid, before the bid opening by sending written notification to the Director of Purchasing. Bids may be withdrawn after the bid opening only with written authorization from the Director of Purchasing.

10. **Defects or Irregularities in Bids:** The county reserves the right to waive any defect or irregularity in any bid received. In case of an error in extension of prices or totals in the bid, the unit prices shall govern.

11. **Brand Name:** If items in this invitation for bid have been identified, described or referenced by a brand name or trade name description, such identification is intended to be descriptive, but not restrictive and is to indicate the quality and characteristics of products that may be offered. Alternative products may be considered for award if clearly identified in the bid. Items offered must meet required specifications and must be of a quality which will adequately serve the use and purpose for which intended.

12. **Bidder Substitutions:** Bidders offering substitutions or deviations from specifications stated in the invitation to bid, shall list such substitutions or deviations on the "Exceptions to Specifications" sheet provided, or on a separate sheet to be submitted with the bid. The absence of such list shall indicate that the bidder has taken no exception to the specifications. The evaluation of bids and the determination as to equality and acceptability of products or services offered shall be the responsibility of the county.

13. **Non-Collusion**: By responding to this invitation to bid, the bidder represents that the bid is not made in connection with any competing bidder, supplier, or service provider submitting a separate response to this invitation to bid, and is in all respects fair and without collusion or fraud.

14. **Arrears**: Bids will not be accepted from any person, firm, or corporation who is in arrears in any debt or obligation to Fayette County.

15. **Bid Evaluation:** Award will be made to the lowest responsive, responsible bidder, taking into consideration payment terms, vendor qualifications and experience, quality, references, any exceptions listed, and/or other factors deemed relevant in making the award. The county may make such investigation as it deems necessary to determine the ability of the bidder to perform, and the bidder shall furnish to the county all information and data for this purpose as the county may request. The county reserves the right to reject any bid item, any bid, or all bids, and to re-advertise for bids.

16. **Discounts:** Cash discounts offered will be a consideration in awarding the bid, but only if they give the county at least 15 days from receipt of invoice to pay. For taking discounts, time will be computed from the date of acceptance at destination or the date a correct invoice is received, whichever is the later date. Payment is deemed made, for the purpose of earning the discount, on the date of the check. For payment of full invoice price, minimum terms of net 30 are preferred.

17. **Trade Secrets – Confidentiality:** If any person or entity submits a bid or proposal that contains trade secrets, an affidavit shall be included with the bid or proposal. The affidavit shall declare the specific included information which constitutes trade secrets. Any trade secrets must be either (1) placed in a separate envelope, clearly identified and marked as such, or (2) at a minimum, marked in the affidavit or an attached document explaining exactly where such information is, and otherwise marked, highlighted, or made plainly visible. See O.C.G.A. § 50-18-72 (A)(34).

18. **Trade Secrets – Internal Use:** In submitting a bid, the bidder agrees that the county may reveal any trade secret materials contained in the bid to all county staff and officials involved in the selection process, and to any outside consultant or other third parties who may assist in the selection process. The bidder agrees to hold harmless the county and each of its officers, employees, and agents from all costs, damages, and expenses incurred in connection with refusing to disclose any material which the bidder has designated as a trade secret.

19. **Ethics – Disclosure of Relationships**: Before a proposed contract in excess of $10,000.00 is recommended for award to the Board of Commissioners or the County Administrator, or before the County renews, extends, or otherwise modifies a contract after it has been awarded, the contractor must disclose certain relationships with any County Commissioner or County Official, or their spouse, mother, father, grandparent, brother, sister, son or daughter related by blood, adoption, or marriage (including in-laws). A relationship that must be reported exists if any of these individuals is a director, officer, partner, or employee, or has a substantial financial interest the business, as described in Fayette County Ordinance Chapter 2, Article IV, Division 3 (Code of Ethics).

    If such relationship exists between your company and any individual mentioned above, relevant information must be presented in the form of a written letter to the Director of Purchasing. You must include the letter with any bid, proposal, or price quote you submit to the Purchasing Department.

    In the event that a contractor fails to comply with this requirement, the County will take action as appropriate to the situation, which may include actions up to and including rejection of the bid or offer, cancellation of the contract in question, or debarment or suspension from award of a County contract for a period of up to three years.

20. **Contract Execution & Notice to Proceed**: After the Board of Commissioners makes an award, all required documents are received by the county, and the contract is fully executed with signature of both parties, the county will issue a written Notice to Proceed. The county shall not be liable for payment of any work done or any costs incurred by any bidder prior to the county issuing the Notice to Proceed.

21. **Unavailability of Funds**: This contract will terminate immediately and absolutely at such time as appropriated and otherwise unobligated funds are no longer available to satisfy the obligations of the county under the contract.

22. **Insurance**: The successful bidder shall, without expense to the county, carry the following insurance, to be in effect throughout the term of the contract, in at least the amounts and limits as follows:

    a. **General Liability Insurance**: $1,000,000 combined single limit per occurrence, including bodily and personal injury, destruction of property, and contractual liability.

    b. **Automobile Liability Insurance**: $1,000,000 combined single limit each occurrence, including bodily injury and property damage liability.

    c. **Worker's Compensation & Employer's Liability Insurance**: Workers Compensation as required by Georgia statute.

    d. **Builders Risk / All Risk Insurance**: Coverage to insure against all risks of accidental physical loss, for the full insurable value of the project.

Before a contract with the successful bidder is executed, the successful bidder shall provide Certificates of Insurance for all required coverage. The successful bidder can provide the Certificate of Insurance after award of the contract, but must be provided prior to execution of the contract document by both parties. The certificate shall list an additional insured as follows:

Fayette County Georgia
140 Stonewall Avenue West
Fayetteville, GA 30214

23. **Bid Bond**: You must include a bid bond with your bid, equal to five percent (5%) of the total amount bid. Bid bonds shall be provided by a surety which appears on Georgia's list of approved sureties administered by the State Insurance Commissioner, or the U.S. Treasury's list of approved bond sureties (Circular 570).

24. **Performance and Payment Bonds**: Prior to execution of a contract, the successful bidder shall submit performance and payment bonds each equal to 100 percent of the contract value, provided by a surety which appears on Georgia's list of approved sureties administered by the State Insurance Commissioner, or the U.S. Treasury's list of approved bond sureties (Circular 570).

25. **Unauthorized Performance:** The county will not compensate the contractor for work performed unless the work is authorized under the contract, as initially executed or as amended.

26. **Severability**: The invalidity of one or more of the phrases, sentences, clauses or sections contained in the contract shall not affect the validity of the remaining portion of the contract. If any provision of the contract is held to be unenforceable, then both parties shall be relieved of all obligations arising under such provision to the extent that the provision is unenforceable. In such case, the contract shall be deemed amended to the extent necessary to make it enforceable while preserving its intent.

27. **Delivery Failures:** If the contractor fails to deliver contracted goods or services within the time specified in the contract, or fails to replace rejected items in a timely manner, the county shall have authority to make open-market purchases of comparable goods or services. The county shall have the right to invoice the contractor for any excess expenses incurred, or deduct such amount from monies owed the contractor. Such purchases shall be deducted from contracted quantities.

28. **Inspection and Acceptance of Deliveries**: The county reserves the right to inspect all goods and products delivered. The county will decide whether to accept or reject items delivered. The inspection shall be conclusive except with respect to latent defects, fraud, or such gross mistakes as shall amount to fraud. Final inspection resulting in acceptance or rejection of the products will be made as soon as practicable, but failure to inspect shall not be construed as a waiver by the county to claim reimbursement or damages for such products which are later found to be in non-conformance with specifications. Should public necessity demand it, the county reserves the right to use or consume articles delivered which are substandard in quality, subject to an adjustment in price to be determined by the Purchasing Director.

29. **Force Majeure**: Neither party shall be deemed to be in breach of the contract to the extent that performance of its obligations is delayed, restricted, or prevented by reason of any act of God, natural disaster, act of government, or any other act or condition beyond the reasonable control of the party in question.

Fayette County, Georgia
Checklist of Required Documents

(Be Sure to Return This Checklist and the Required Documents in the order listed below)

BID #1144-B, FIRING RANGE & OBSERVATION TOWER

- Company information – on the form provided _____
- Bid bond _____
- Contractor Affidavit under O.C.G.A. §13-10-91(b)(1) _____
- Bid Sheet _____
- List of exceptions, if any – on the form provided _____
- References – on form provided _____

COMPANY NAME: _____

Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of Fayette County, Georgia has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

_____
Federal Work Authorization User Identification Number

_____
Date of Authorization

_____
Name of Contractor

BID #1144-B FIRING RANGE & OBSERVATION TOWER
Name of Project

FAYETTE COUNTY GEORGIA
Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ____, 2016 in (city) _____, (state) _____

_____
Signature of Authorized Officer or Agent

_____
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME

ON THIS THE _____ DAY OF _____, 2016.

_____
NOTARY PUBLIC

My Commission Expires:

_____

#1144-B: FIRING RANGE & OBSERVATION TOWER - REFERENCES

Please list three (3) references of current or very recent customers who can verify the quality of service your company provides. Projects of similar size and scope are required.

REFERENCE ONE

Government/Company Name _____

City _____

Contact Person and Title _____

Phone _____ Contract Period _____

Scope of Work _____

REFERENCE TWO

Government/Company Name _____

City _____

Contact Person and Title _____

Phone _____ Contract Period _____

Scope of Work _____

REFERENCE THREE

Government/Company Name _____

City _____

Contact Person and Title _____

Phone _____ Contract Period _____

Scope of Work _____

COMPANY NAME_____

BID #1144-B: FIRING RANGE & OBSERVATION TOWER

COMPANY INFORMATION

Company_____

Physical Address Of Business _____

_____

Mailing Address (**If Different**)_____

_____

Authorized Representative_____
(Print or Type)

Authorized Representative_____
(Signature)

Title_____

Email Address:_____

Telephone Number: _____ Fax Number: _____

Cellular Number: _____

DOCUMENT 00 11 16 – INVITATION TO BID

DEADLINE: AUGUST 3, 2016 at 3:00 PM

An invitation to bid is hereby extended to qualified contractors for the Fayette County Training Facility Firing Range and Observation Tower, including all specified equipment, finishes, materials, accessories, and labor.

All work shall be done in accordance with the bid documents (the Project Manual and Construction Documents) with the exception of future addenda if any, which will be posted on the Fayette County website at:
http:/fayettecountyga.gov/purchasing/bids_and_proposals.asp

All questions and request for information correspondence shall be in written form addressed only from the General Contractor and directed to Trina Barwicks at the Fayette County Purchasing Department. Emails are preferred and should be addressed to:
Trina Barwick's at tbarwicks@fayettecountyga.gov

Contract, if awarded, will be based on a Lump Sum Contract based on AIA A101. All bids shall be lump sum and detailed as required in the bid form Section 00 41 00 of this document. The project will be awarded by base bid (including allowances), in as much as no alternates are Included.

Scope of work will consist of all work indicated or addressed in the construction documents. If you have any questions regarding this scope of work, please notify Fayette County Purchasing Department at least 72 hours prior to the deadline for submitting bids..

Bidder must comply with the following:

- This project is expected to be certified for occupancy by 09/30/2016. A $500.00 per day penalty for liquidated damages will be assessed beginning at 12:00 midnight of this date and until a complete Certificate of Occupancy is obtained. Please note that there may be an extension of time allowed due to inclement weather. Proof of negative effect of days consisting of rainfall above the average daily amount for this area or other detrimental situations will be required. All decisions are at the discretion of the owner.

- A complete Bid will include a completed break down of costs on the form provided. This form may be recreated by the proposer to facilitate the provision of this information. All line items must be included. The numbers on this sheet must match the base bid amount submitted.

- Once the contract has been awarded all Change Orders will be handled per AIA A101 (2007) Section 7.3.11. All change orders will be time and material plus a set overhead and profit percentage. This percentage will be 7.5% for the portion of the work self-performed by the General Contractor or 5% for the portion of the work performed by a sub-contractor. All deductive change orders will be cost of work plus the above percentages, unless approved by the architect. Architect must approve all labor and wage rates, unit prices and rental and equipment usage rates. All change orders must be approved by the architect.

- A complete and acceptable bid must include the signed and notarized O.C.G.A. 13-10-91 Contractor Affidavit included in this manual.

ADDENDA ACKNOWLEDGEMENT

There are no addenda as of July 24, 2015. Use form below for future addenda as they occur.

The receipt of the following addendum or addenda is acknowledged:

Addendum Number: _____ Date: _____
Addendum Number: _____ Date: _____
Addendum Number: _____ Date: _____
Addendum Number: _____ Date: _____
Addendum Number: _____ Date: _____

ADDENDUM RECEIPT:

WITNESSED: _____

EXCEPTIONS TO CONTRACT FOR FAYETTE COUNTY TRAINING FACILITY FIRING RANGE AND OBSERVATION TOWER.

IN THE EVENT THAT THIS PAGE IS **NOT** ATTACHED TO THE BID FORM OR PART OF THE PROPOSAL BID, IT SHALL BE UNDERSTOOD BY ALL PARTIES THAT **NO** EXCEPTIONS ARE TAKEN TO THE ABOVE NOTED BID DOCUMENTS.

IF THE BIDDER IS **NOT** PROVIDING ALL WORK, MATERIALS, BUILDING COMPONENTS, EQUIPMENT AND LABOR REQUESTED IN THIS BID INVITATION, HE SHALL INDICATE IN THIS PAGE THE ELEMENTS WHICH ARE **NOT** SUPPLIED AS PART OF THIS BID. IN ADDITION, IN THE SPACES PROVIDED ON THE BID SUMMARY FORM THE BIDDER SHALL ENTER "N/A" FOR ITEMS WHICH ARE **NOT** SUPPLIED.

END OF DOCUMENT

DOCUMENT 00 31 32 – GEOTECHNICAL DATA

There were no preliminary geotechnical reports or studies done for this project.

END OF GEOTECHNICAL DATA

BASE BID SUMMARY FOR:
FAYETTE COUNTY TRAINING FACILITY FIRING RANGE AND OBSERVATION TOWER

A	General Conditions	Cost		$/S.F.	Subcontractors
101	Permits (BY OWNER)				
102	Mobilization and Field Office				
103	Performance Bond / 100% Material Payment Bond				
104	Project Insurance				
105	Payroll Taxes & Benefits				
106	Job Supervision				
107	Field Eng. / Layout /Construction Staking / Testing				
108	Equipment				
109	Expendables / Job Trailer / Toilets / Misc. Expenses				
110	Construction Utilities (Temporary)				
111	Construction Project Signage Allowance				
112	General Clean-up & Disposal				
A	**Subtotal**				
B	**Site Development**				
201	Site Clearing				
202	Earthwork + Grading				
203	Termite Control Soil Poisoning				
204	Concrete Sidewalks and Aprons				
205	Erosion Control/Landscape	$1,000			
206	Existing Restroom Improvements	$5,000			
207	Site Utilities Connections				
208	Septic Sewer System				
209	Asphalt / Curb & Gutter / Catch Basin Lids				
B	**Subtotal**				
C	**Building Construction**				
301	Demolition				
302	Concrete				
303	E.I.F.S.				
304	Roofing				
305	Rough Carpentry, Framing, Ply-wood (including nailers and sheathing)				
306	Cabinetry/Millwork				
307	Insulation				
308	Metal Roofing Refinishing				
309	Flashing and Sheet Metal				
310	Waterproofing				
311	Cement Board Siding				
312	Caulking and Sealants				
313	Interior Wood Doors & Frames				
314	Hollow Metal Doors & Frames				
315	Windows				
316	Stairs and Railings				
317	Lighting Fixtures				
318	Finish Hardware				
319	Gypsum Wall Board Assemblies				
320	Ceiling Assemblies (2x2) & GWB				
321	Rubber base, wood base				
322	Resilient Flooring				
232	Paint				
324	Fire Extinguishers and Accessories (Allow for Type A-B-C 10 lb.)				
235	Specialties, Misc. Items, Roll up Door & Canopies				
326	HVAC				
327	Electrical				
328	Misc Finishes				
C	**Subtotal**				
	Recap of Construction Costs				
	General Conditions (101-112)				
	Site Development/Grading(201-209)				
	Building Construction (301-334)				

END OF BID FORM

DOCUMENT 00 42 13 – BID FORM

This Bidder Submitted by: _____

Address: _____

_____

Telephone: _____

Email: _____

DATE: _____

Dear Sir or Madam:

The undersigned Bidder declares that he/she has read and understands the Architectural drawings dated 06/24/16, and the Project Manual identified herein as the Bid Documents, for the above listed work as prepared by K. A. Oldham Design, Inc. of Newnan, Georgia. The undersigned Bidder further declares that he has examined the site of work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done.

The undersigned Bidder declares that he/she shall furnish all permits, work, services, and materials, including equipment and accessories, called for or implied in the above-mentioned Construction Documents and that he will accept as complete compensation therefore the sum of

_____DOLLARS ($ _____) which is hereinafter referred to as the Base Bid. No partial bids will be accepted.

Estimated time of completion: _____ consecutive calendar days

The undersigned Bidder further declares that, if awarded the Contract, he shall begin all work associated with the project within the constraints set forth by the owner at the location listed above by _____ consecutive calendar days from the issuance of Notice to Proceed.

For cost evaluation purposes, we have included a bid summary spreadsheet that shall include all associated labor, materials and equipment that are required to complete this project.

Please provide all information requested:
This is mandatory and must be submitted for a successful bid.

If this bid is accepted and the undersigned Bidder should fail to enter into the contract, as fore stated, within seven (7) days from the date of mailing to him a letter of written notice, at the address herein, noting that the contract is ready for signature, the Owner may, at his option, declare that the Bidder has abandoned the Contract and this bid and its acceptance is null and void.

The undersigned Bidder hereby agrees that his bid shall not be withdrawn within sixty (60) days from the time set for the receipt of the Bid Package.

The undersigned Bidder hereunder acknowledges the receipt of all Addenda listed on the previous pages labeled under the heading ADDENDA ACKNOWLEDGMENT.

The undersigned bidder further states that:

**********All work, materials, building components and labor are in strict compliance and accordance with the Construction Documents listed above and prepared by K.A. Oldham Design, Inc. and noted as Commission No. 1464.00, unless stated on the attached page labeled EXCEPTIONS TO CONTRACT FOR FAYETTE COUNTY TRAINING FACILITY FIRING RANGE AND OBSERVATION TOWER. **********

THIS SIGNATURE VALIDATES ALL BID NUMBERS ABOVE.

SIGNED: _____ TITLE:_____ DATE:_____

COMPANY: _____

ADDRESS: _____

END OF BID FORM

SECTION 00 43 23 - ALTERNATES FORM

1.1 BID INFORMATION

A. Project Name: FAYETTE COUNTY FIRING RANGE/OBSERVATION TOWER

B. Project location: 340 HEWELL ROAD, JONESBORO, GA 30238

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form

1.3 DESCRIPTION

A. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if particular alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment.

B. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."

C. If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

D. The Bidder shall be responsible for determining from the Contract Documents the affects of each alternate on the Contract Time and the Contract Sum.

E. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly after the award of the contract.

F. Acceptance or non-acceptance of any alternates by the Owner shall have no effect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

1.4 NO ALTERNATES AT THIS TIME

END OF ALTERNATES FORM 00 43 23

DOCUMENT 00 52 00 – AGREEMENT FORM

"The Standard Form of Agreement between Owner and Contractor," AIA Document A101, dated 1997, of the American Institute of Architects, is included immediately following this page. If AIA Document A101 is not included, it is hereby made a part of these documents to the same extent as if herein written out in full. A copy is on file at the Architects office, and my be examined during normal working hours

END OF AGREEMENT FORM

DOCUMENT 00 72 00 – GENERAL CONDITIONS

"The General Conditions of the Contract for Construction," AIA Document A201, dated 2007, of the American Institute of Architects, is included immediately following this page.

END OF GENERAL CONDITIONS

DRAFT

AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)
«1464-00 Fayette County Range and Shoot House»
«340 Hewell, Rd.
Fayetteville, Georgia 30238
Fayette County Georgia
»

THE OWNER:
(Name, legal status and address)
«Fayette County»«»
«140 Stonwall Avenue
Fayetteville, Georgia 30214»

THE ARCHITECT:
(Name, legal status and address)
«K.A. Oldham Design, Inc»«, Subchapter S Corporation»
«14 East Washington St.
Newnan, GA 30263»

TABLE OF ARTICLES

ADDITIONS AND DELETIONS:
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14 TERMINATION OR SUSPENSION OF THE CONTRACT

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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 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

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

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

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

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

§ 1.3 CAPITALIZATION

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

§ 1.4 INTERPRETATION

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

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment 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 this 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 material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them 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 material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

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 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or

the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 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.

§ 2.2.3 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.

§ 2.2.4 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.

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

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

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

§ 2.4 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 written 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 deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor 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. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

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 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 2.2.3, 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 make 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 as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and 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 written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required 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 authorized by the Architect in accordance with Sections 3.12.8 or 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

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.

§ 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 21 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 an equitable adjustment 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 in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed 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.

§ 3.8 ALLOWANCES

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

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

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

§ 3.9 SUPERINTENDENT

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

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply 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 SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be 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, 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.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be 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 the way by which 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.

§ 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 requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing 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 written 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. 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 cause such services or certifications to be provided by a properly 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, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 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, and 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 and patching shall be restored to the condition existing prior to the cutting, fitting and 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 such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's 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 or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

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

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect 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 such 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 the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such 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, 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 that would otherwise exist as to a party or person described in this Section 3.18.

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

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 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.

§ 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.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 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, except as provided in Section 3.3.1.

§ 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 report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) 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 FACILITATING CONTRACT ADMINISTRATION
Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 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 13.5.2 and 13.5.3, whether or not such 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, material and equipment 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, unless otherwise specifically stated by the Architect, 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 authorize 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 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 duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 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.

§ 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 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 or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply 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 previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, 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, which the Contractor, by these 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 in writing; 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 such 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 Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 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 other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the 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, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner 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 report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report 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, except as to defects not then reasonably discoverable.

§ 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 the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors 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, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 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 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 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.

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

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and 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 7.3.7 shall be limited to the following:

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

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

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

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and

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

§ 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 has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

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, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

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

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

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.

§ 9.2 SCHEDULE OF VALUES

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

§ 9.3 APPLICATIONS FOR PAYMENT

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

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the 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 material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

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

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having 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 issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part 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 comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. 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. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. 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 material 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 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.

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

§ 9.5.3 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 material or equipment suppliers 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 Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, 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 material and equipment 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 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, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment 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 and 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, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 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 seven additional days' written 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 shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

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

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall 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, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall 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 such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such 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 as required under Section 11.3.1.5 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.

§ 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 written 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 and, 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 terms and conditions of 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 and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial 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 and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, 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. If such lien 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 such lien, 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 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 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; or
- **.3** terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material 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 or the Contractor's Subcontractors or Sub-subcontractors; and
- **.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 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 owners and users of adjacent sites and utilities.

§ 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, except damage or loss 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, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS
§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. 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 report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written 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 such material or substance or who are to perform the task of removal or safe containment of such 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 in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 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 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 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 indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance 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 indemnify 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 LIABILITY INSURANCE~~

~~**§ 11.1.1** The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:~~

- ~~.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;~~
- ~~.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;~~
- ~~.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;~~
- ~~.4 Claims for damages insured by usual personal injury liability coverage;~~
- ~~.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;~~
- ~~.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;~~
- ~~.7 Claims for bodily injury or property damage arising out of completed operations; and~~
- ~~.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.~~

~~**§ 11.1.2** The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction~~

of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents 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 during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or

otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 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, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

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, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, 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 covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance 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 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the

~~Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.~~

~~**§ 11.3.10** The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.~~

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

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

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, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after 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 an 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 written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 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, whether completed or partially completed, of the Owner or separate contractors 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 except that, 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 such 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 such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 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.

§ 13.4.2 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 there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 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 (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 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 13.5.1, 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 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 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.

§ 13.5.4 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.

§ 13.5.5 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.

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

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may 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.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time 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 13.7.

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 or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- **.1** Issuance of an order 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 promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

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

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor 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' written 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

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;

.2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

.3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, 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' written 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 as described in 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 written 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 Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

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, 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.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written 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 must 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 CONTINUING CONTRACT PERFORMANCE

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. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein 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.

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

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

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

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

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, 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 arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no 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 such 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 an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, 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 15.1.6 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** 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. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.~~

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

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

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

~~**§ 15.4.4 CONSOLIDATION OR JOINDER**~~

~~**§ 15.4.4.1** Either party, at its sole discretion, 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** Either party, at its sole discretion, 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 the Owner and Contractor under this Agreement.~~

SECTION 0110 00 - SUMMARY

PART 1 - GENERAL

1.1 PROJECT INFORMATION

A. Project: FAYETTE COUNTY TRAINING FACILITY FIRING RANGE AND OBSERVATION TOWER

1. Project Location: 340 Hewell Road, Jonesboro, GA 30238

B. Owner: Fayette County

340 Hewell Road, Jonesboro, GA 30238

C. Architect: K. A. Oldham Design, Inc.

14 East Washington Street, Newnan, GA 30263

D. Contractor: TBD

E. The work consists of:
1. Construction of a two story observation tower.
2. Construction of two pavilions. One on either side of the observation tower
3. Concrete work, sod and dividing wall for short firing range
4. Construction of a 60'x60' shoot house

Engineered Mechanical, Electrical and Structural drawings have been provided within the BID SET documents dated 06-24-16. The engineering for these systems have been selected and reviewed by the Architect. Specification sections regarding these areas are included in this manual for quality control purposes. No new taps will be required for services however GC will be responsible for connecting new or modified distribution to existing service points.

F. Owner-Furnished Items: The following products will be furnished by Owner and shall be installed by Contractor as part of the Work:

1. Grading to intended finish grade

G. Work Under Separate Contracts:

1. Target System by The Drennan Company

H. Work by Owner:

1.2 WORK RESTRICTIONS

A. Contractor's Use of Premises: During construction, Contractor will have full use of site and building indicated. Contractor's use of premises is limited only by Owner's right to perform work or employ other contractors on portions of Project.

B. Contractor will maintain integrity of erosion control and BMP's on the site. Disruptions to installed structures or devices will be reported immediately.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

SECTION 01 20 00 - PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight and delivery to Project site.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials under allowance shall be included as part of the Contract Sum and not part of the allowance.

C. Obtain three bids for each allowance and submit to Architect, in the form specified for Change Orders, with recommendations. Purchase products and systems selected by Architect.

D. Advise Architect of the date when selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

E. Submit invoices to show cost and actual quantities of materials delivered. Reconciliation of allowance amounts with actual costs will be by Change Order

F. Fayette County must have the delivery ticket identifying the material, quantity and cost before it can be included in a pay application. Material stored offsite will also require that Fayette County make a site visit to the storage facility to confirm the material delivered.

1.2 ALTERNATES

A. Alternate: An amount bid by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.
3. Any additional time (extension of project schedule) required for accepting the alternate must be noted.

1.3 UNIT PRICES

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. Bidders shall indicate on the bid form unit prices as described in Part 3 of this section.

B. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

1.4 SUBSTITUTION PROCEDURES

A. Substitutions include changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and bids by Contractor after award of the Contract.

1. Substitution Request Form: Use CSI Form 13.1A
2. Submit (3) three copies of each request for product substitution.
3. Submit requests within (21) twenty-one days before critical order or delivery date to avoid extension of time.
4. Do not submit unapproved substitutions on Shop Drawings or other submittals.
5. Identify product to be replaced and show compliance with requirements for substitutions. Include a detailed comparison of significant qualities of bid substitution with those of the Work specified, a list of changes needed to other parts of the Work required to accommodate bid substitution, and any bid changes in the Contract Sum or the Contract Time should the substitution be accepted.
6. Architect will review the bid substitution and notify Contractor of its acceptance by Change Order. Response regarding non-acceptance will also be given to contractor.

1.5 CONTRACT MODIFICATION PROCEDURES

A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

B. Owner-Initiated Bid Requests: Architect will issue a detailed description of bid changes in the Work.

1. Bid Requests are not instructions either to stop work in progress or to execute the bid change.
2. Within time specified in Bid Request or (20) twenty days, when not otherwise specified, after receipt of Bid Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time.

C. Contractor-Initiated Bids: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

D. On Owner's approval of a Bid Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701, for all changes to the Contract Sum or the Contract Time. See instructions to bidders for more detailed pricing procedure and directions.

E. Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

F. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.6 PAYMENT PROCEDURES

A. Submit a Schedule of Values at least (10) ten days before the initial Application for Payment. Break down the Contract Sum into at least one line item for each Specification Section in the Project Manual table of contents. Coordinate the schedule of values with Contractor's construction schedule.

1. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
2. Provide separate line items in the schedule of values for initial cost of materials and for total installed value of that part of the Work.

B. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as forms for Applications for Payment.

C. Submit (3) three copies of each application for payment according to the schedule established in Owner/Contractor Agreement.

1. With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
2. Submit final Application for Payment with or proceeded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

a. Include insurance certificates, proof that taxes, fees, and similar obligations were paid, and evidence that claims have been settled.
b. Include consent of surety to final payment on AIA Document G707.
c. Submit final meter readings for utilities, a record of stored fuel, and similar data as of the date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

D. Payment becomes due within 30-days of an approved “Application for Payment” request.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALLOWANCES

A. $1,000 for landscape and erosion control

B. $5,000 for improvements to existing restroom

3.2 SCHEDULE OF UNIT PRICES

A. All UNIT PRICE line items as requested on Bid Form

END OF SECTION 01 20 00

SECTION 01 30 00 - ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 PROJECT MANAGEMENT AND COORDINATION

A. Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work.

B. Requests for Information (RFIs): On discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI. Use forms acceptable to Architect and Owner.

C. A Pre-Construction meeting shall be held at a location to be announced prior to commencement of the Work.

D. Schedule and conduct progress meetings at Project site at biweekly intervals. Notify Owner and Architect of meeting dates and times. Require attendance of each subcontractor or other entity concerned with current progress or involved in planning, coordination, or performance of future activities.

1. Record minutes and distribute to all necessary parties, to include Owner and Architect.

1.2 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. SEE SECTION 01 33 00 DIGITAL SUBMITTAL PROCEDURES.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. SEE SECTION 01 33 00 DIGITAL SUBMITTAL PROCEDURES

2.2 INFORMATIONAL SUBMITTALS

A. SEE SECTION 01 33 00 DIGITAL SUBMITTAL PROCEDURES

2.3 DELEGATED DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit (5) five copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type schedule within (5) five days prior to pre-construction meeting.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

PART 3 - EXECUTION

3.1 SUBMITTAL REVIEW

A. SEE SECTION 01 33 00 DIGITAL SUBMITTAL PROCEDURES

3.2 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Time Frame: Extend schedule from date established for the notice of award to the date of final completion.

B. Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. As the Work progresses, indicate Actual Completion percentage for each activity.

C. Distribute copies of approved schedule to Owner, Architect, subcontractors, testing and inspecting agencies, and parties identified by Contractor with a need-to-know schedule responsibility. When revisions are made, distribute updated schedules to the same parties.

END OF SECTION 01 30 00

SECTION 01 33 00 – DIGITAL SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Divisions 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals. All submittals must be received in digital format with the exception of physical samples and material submittals.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require the Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as action submittals.

B. Informational Submittals: Written and graphic information and physical samples that do not require the Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual specification sections as informational submittals.

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery to establish dates. Include additional time required for making corrections or modifications to submittals noted by the Architect and additional time for handling and reviewing submittals required by those corrections. Send digital submittal schedule to Architect within 30 days from the notice to proceed. Schedule should be in a format which can be modified by the Architect.

1. Coordinate the Submittal Schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with start-up construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently in accordance with the complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format.
    a. Scheduled date for first submittal.
    b. Speciation Section number and title.
    c. Submittal category: Action, informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled dates for purchasing.
    h. Scheduled dates for installation.
    i. Activity or event number.

1.1 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. All submittals (with the exception of physical samples) shall be made in digital format (PDF) unless otherwise indicated. Any references to paper submittals in the technical specification sections shall be revised to indicate digital submittal format. All digital submittals shall be made through email, or posted to the project FTP site and an email sent to indicate that his has been posted for review. Submittals will not be logged in when posted to the FTP unless notification (email or written) is received by the Architect indication this has been posted. Upon notification of posting and verification that the indicated information has been posted, the submittal will be logged in on the schedule and the review time will start on this date.

Coordination: Coordinate preparation and processing of submittals with the performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Submit Operation and Maintenance Manuals concurrent with action submittal.

b. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Processing Time: Allow time for submittal review, including time for re-submittals, as follows. Time for review shall commence on the Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise the Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Re-submittal Review: Allow 15 days for review of each re-submittal.
4. Sequential Review: Where sequential review of submittals by the Architect's consultants, the Owner, or other parties is indicated, allow 21 days for initial review of each submittal.

C. Identification and Information: Place a permanent label or title block on each submittal item for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. All Contractor notes and marks shall be GREEN in color; all Architect's notes and marks shall be RED.
3. Include the following information for processing and recording action taken:

a. Project name.
b. Date.
c. Name of Architect.
d. Name of Construction Manager (if applicable).
e. Name of Contractor.
f. Name of subcontractor.
g. Name of manufacturer.
h. Submittal number including revision identifier.

1) Submittal number shall use Specification Section number followed by a sequential number (e.g., 061000-001). Re-submittals shall include an additional number followed by a decimal (e.g., 061000-001.01).

i. Drawing number and detail references, as appropriate.
j. Location(s) where product is to be installed, as appropriate.
k. Other necessary identification.

D. Options: Identify options requiring selection by the Architect.

E. Deviations: Identify deviations from the Contract Documents on submittals

F. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. The Design Professional will return submittals, without review, received from sources other than the Contractor.

1. Transmittal Form: Use the Contractor's office form.
2. Transmittal Form: Provide locations on form for the following information:

    a. Project name.
    b. Date.
    c. Destination (To:).
    d. Source (From:).
    e. Names of subcontractor, manufacturer, and supplier.
    f. Category and type of submittal.
    g. Submittal purpose and description.
    h. Specification Section number and title.
    i. Indication of full or partial submittal.
    j. Drawing number and detail references, as appropriate.
    k. Transmittal numbered consecutively.
    l. Submittal and transmittal distribution record.
    m. Remarks.
    n. Signature of transmitter.

3. On an attached separate sheet, prepared on the Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by the Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

G. Re-submittals: Make re-submittals in same form and format.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from the Architect's action stamp.

H. Distribution: Furnish digital copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Use only final submittals that are marked with approval notation from the Architect's action stamp.

PART 2 - PRODUCTS

1.1 DIGITAL SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and provide submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections. All required submittals shall be made in a digital PDF format.

1. Any reference to paper copies of submittals within the individual specification sections shall be modified to reference the digital PDF documents with the exception of physical samples. For all specifications requiring physical samples, contractor shall submit a minimum of four (4) physical samples and as required by the individual specification sections.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule. Assemble each submittal individually and transmit each submittal using a digital PDF format transmittal form.
3. Digital transmittals may be made via email or through an approved FTP site. Any submittal posted on an approved FTP site must be accompanied by a digital PDF email transmittal with delivery receipt for documentation.
4. Contractor shall review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Mark with digital approval stamp (in GREEN) before submitting to Architect. Architect will provide review comments on digital PDF document and digital action stamp (in RED).
5. Contractor shall maintain a record of each submittal on-site at all times. On-site copies of the submittals may be digital PDF documents or printed hard copies at the contractor's discretion. Submittal shall be made available to Architect or owner at all times.
6. Closeout Submittals and Maintenance Material Submittals: Submit as digital PDF documents on flash drive or CD/DVD/
7. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Permits, Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
    a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
8. Test and Inspection Reports Submittals: Submit as digital documents.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
    a. Submittal Package number and Submittal Item number.
    b. Manufacturer's catalog cuts.
    c. Manufacturer's product specifications.

d. Manufacturer's written recommendations and installation instructions.
e. Standard color charts.
f. Statement of compliance with specified referenced standards.
g. Testing by recognized testing agency.
h. Application of testing agency labels and seals.
i. Notation of coordination requirements.

4. For equipment, include the following in addition to the above, as applicable:
   a. Wiring diagrams showing factory-installed wiring.
   b. Printed performance curves.
   c. Operational range diagrams.
   d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
5. Submit Product Data concurrent with Samples.
6. Submit Product Data in electronic (PDF) file format.

J. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

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

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

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.

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

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

   a. Submittal Package number and Submittal Item number.
   b. Generic description of Sample.
   c. Product name and name of manufacturer.
   d. Sample source.
   e. Number and title of applicable Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.

    b. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of the Contractor.

4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

    a. Number of Samples: For turnover purpose, submit four (4) full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. The Architect will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product bid for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit four (4) sets of Samples. The Architect will return submittal with options selected.

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

L. Subcontract List: Prepare a written summary identifying individuals or firms bid for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.
4. Submit subcontract list in PDF electronic file.

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

N. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on American Welding Society (AWS) forms. Include names of firms and personnel certified.

O. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

P. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

Q. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

R. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

S. Field Test Reports: Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

PART 3 - EXECUTION

1.1 CONTRACTORS REVIEW

T. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp (make notes and marks in GREEN) before submitting to the Architect.

U. Approval Stamp: Stamp each submittal with a digital approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of the Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

V. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Division 01 Section "Closeout Procedures."

1.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear the Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks in RED to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

C. Informational Submittals: Architect will review each submittal and will return it if it does not comply with requirements.

D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from the Architect.

E. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 33 00

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Testing and inspecting services shall be performed by independent testing agencies under contract with the owner. Contractor is responsible for scheduling times for tests, inspections, and obtaining samples and notifying testing agency.

B. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements, comply with the most stringent requirement. Refer uncertainties to Architect for a decision.

C. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum. The actual installation may exceed the minimum within reasonable limits. Indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision.

D. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
6. Names of individuals making tests and inspections.
7. Description of the Work and test and inspection method.
8. Complete test or inspection data, test and inspection results, an interpretation of test results, and comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
9. Name and signature of laboratory inspector.
10. Recommendations on retesting and re-inspecting.

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

F. Testing Agency Qualifications: An independent agency with the experience and capability to conduct testing and inspecting indicated; and where required by authorities having jurisdiction, that is acceptable to authorities.

G. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents. No additional time or payment will be given for any additional testing required by such non-compliance.

H. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Promptly notify Architect and Contractor of irregularities or deficiencies in the Work observed during performance of its services.
2. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
3. Do not perform any duties of Contractor.

I. Auxiliary Services: Cooperate with testing agencies and provide reasonable auxiliary services as requested. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Security and protection for samples and for testing and inspecting equipment.

J. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

K. Special Tests and Inspections: Owner will engage a qualified testing agency or special inspector to conduct special tests and inspections required by authorities having jurisdiction.

L. Special Tests and Inspections: Conducted by a qualified testing agency or special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 40 00

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Use Charges: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated.

B. Erosion and Sedimentation Control Plan: Submit plan showing compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

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

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

A. Field offices, storage and fabrication sheds, and other support facilities as necessary for construction operations are at the Contractors discretion. Store combustible materials apart from building.

2.2 EQUIPMENT

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

B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 3 - EXECUTION

3.1 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

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

B. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.

C. Sanitary Facilities: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

D. Heating and Cooling: Provide temporary heating and cooling required for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

E. Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

3.2 SUPPORT FACILITIES INSTALLATION

A. Install project identification and other signs in locations approved by Owner to inform the public and persons seeking entrance to Project.

1. Illustration and information for an 8 ft x 4 ft project sign will be provided by architect.

B. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

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

B. Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

C. Furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates. Area to be fenced should minimally include the building and immediate parking area. Expansion of this area to accommodate storage and staging areas is at the contractors' discretion.

D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

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

F. Install and maintain temporary fire-protection facilities. Comply with NFPA 241.

3.4 MOISTURE AND MOLD CONTROL

A. Before installation of weather barriers, protect materials from water damage and keep porous and organic materials from coming into prolonged contact with concrete.

B. After installation of weather barriers but before full enclosure and conditioning of building, protect as follows:

1. Do not load or install drywall or porous materials into partially enclosed building.
2. Discard water-damaged and wet material and material that begins to grow mold.
3. Allow installed wet materials adequate time to dry before being enclosed.

3.5 OPERATION, TERMINATION, AND REMOVAL

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

B. Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion.

C. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.

END OF SECTION 01 50 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

B. Product Substitutions: Substitutions including changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and bids by Contractor after award of the Contract

1. Submit (3) copies of each request for product substitution
2. Submit requests a minimum 21 before critical order or delivery date to avoid extension of time
3. Do not submit unapproved substitutions on Shop Drawings or other submittals
4. Identify product to be replaced and show compliance with requirements for comparable product requests. The following information should be included in each substitution request as applicable:

a) Coordination information, including a list of changes or modification needed to other parts of the Work and to construction performed by the Owner and separate contractors, that will be necessary to accommodate the bid substitution
b) Detailed comparison of significant qualities of bid substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
c) Product Data, including drawings and descriptions of products and fabrication and installation procedures
d) Samples, where applicable or requested
e) List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners
f) Material test reports from a qualified testing agency indicating and interpreting test results for compliance and requirements indicated
g) Research/evaluation reports evidencing compliance with building code in effect for the project
h) Include any changes to overall construction schedule if the bid substitution is accepted.
i) Complete breakdown of costs indicating the cost amount to be added to or deducted from the Contract Sum if the bid substitution is accepted
j) Contractor's certification that bid substitution complies with requirements in the contract documents and is appropriate for application indicated
k) Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of bid substitution to produce indicated results.

5. Architect will review the bid substitution and notify Contractor of its acceptance or rejection by change order. Use product specified if the Architect does not issue a decision on use of a comparable product request.

C. Comparable Product Requests:

1. Submit (3) copies of each request for comparable product. Do not submit unapproved products on Shop Drawings or other submittals.
2. Identify product to be replaced and show compliance with requirements for comparable product requests. Include a detailed comparison of significant qualities of bid
3. product with those of the Work specified
4. Architect will review the bid product and notify Contractor of its acceptance or rejection.

D. Basis-of-Design Product Specification Submittal: Show compliance with requirements.

E. Compatibility of Options: If Contractor is given option of selecting between two or more products, select product compatible with products previously selected.

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

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Deliver products to Project site in manufacturer's original sealed container or packaging, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
3. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
4. Store materials in a manner that will not endanger Project structure.
5. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.

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

PART 2 - PRODUCTS

2.1 PRODUCT OPTIONS

A. Provide products that comply with the Contract Documents, are undamaged, and are new at the time of installation.

1. Provide products complete with accessories, trim, finish, and other devices and components needed for a complete installation and the intended use and effect.

2. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

B. Product Selection Procedures:

1. Where Specifications name a single manufacturer and product, provide the named product that complies with requirements.
2. Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
4. Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements for "comparable product requests" for consideration of an unnamed product.
5. Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated
6. Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements for "comparable product requests" for consideration of an unnamed manufacturer's product.
7. Where Specifications name a single product, or refer to a product indicated on Drawings, as the "basis-of-design," provide the named product. Comply with provisions for "comparable product requests" for consideration of an unnamed product by another manufacturer.

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

D. Unless otherwise indicated, Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 01 70 00 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 CLOSEOUT SUBMITTALS

A. Record Drawings: Maintain a set of prints of the Contract Drawings as record Drawings. Mark to show actual installation where installation varies from that shown originally.

1. Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

B. Operation and Maintenance Data: Submit (2) two copies of manual. Organize data into three-ring binders with identification on front and spine of each binder, and envelopes for folded drawings. Include the following:

1. Manufacturer's operation and maintenance documentation.
2. Maintenance and service schedules.
3. Maintenance service contracts.
4. Emergency instructions.
5. Spare parts list.
6. Wiring diagrams.
7. Copies of warranties.

1.2 CLOSEOUT PROCEDURES

A. Substantial Completion: Before requesting Substantial Completion inspection, complete the following:

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, maintenance service agreements, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Submit record Drawings and Specifications, operation and maintenance manuals, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items.
7. Make final changeover of permanent locks and deliver keys to Owner.
8. Complete startup testing of systems.
9. Remove temporary facilities and controls.
10. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
11. Complete final cleaning requirements, including touchup painting.
12. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will proceed with inspection or advise Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will advise Contractor of items that must be completed or corrected before certificate will be issued.

C. Request inspection for Final Completion, once the following are complete:

1. Submit a copy of Substantial Completion inspection list stating that each item has been completed or otherwise resolved for acceptance.
2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

D. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

E. Submit a written request for final inspection for acceptance. On receipt of request, Architect will proceed with inspection or advise Contractor of unfulfilled requirements. Architect will prepare final Certificate for Payment after inspection or will advise Contractor of items that must be completed or corrected before certificate will be issued.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance.

1. Verify compatibility with and suitability of substrates.
2. Examine roughing-in for mechanical and electrical systems.
3. Examine walls, floors, and roofs for suitable conditions.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. Take field measurements as required to fit the Work properly. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication.

D. Verify space requirements and dimensions of items shown diagrammatically on Drawings.

E. Surface and Substrate Preparation: Comply with manufacturer's written recommendations for preparation of substrates to receive subsequent work.

3.2 CONSTRUCTION LAYOUT AND FIELD ENGINEERING

A. Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks.

B. Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.

C. Engage a land surveyor or professional engineer to prepare a final property survey showing significant features (real property) for Project.

1. At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.3 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated. Make vertical work plumb and make horizontal work level.

1. Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections to form hairline joints.
2. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
3. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations.

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

D. Use products, cleaners, and installation materials that are not considered hazardous.

E. Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place. Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed.

3.4 CUTTING AND PATCHING

A. Provide temporary support of work to be cut. Do not cut structural members or operational elements without prior written approval of Architect.

B. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction in a manner that will minimize evidence of patching and refinishing.

2. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

3.5 CLEANING

A. Clean Project site and work areas daily, including common areas. Dispose of materials lawfully.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
3. Remove debris from concealed spaces before enclosing the space.

B. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion:

1. Remove labels that are not permanent.
2. Clean transparent materials, including mirrors. Remove excess glazing compounds. Replace chipped or broken glass.
3. Clean exposed finishes to a dust-free condition, free of stains, films, and foreign substances. Sweep concrete floors broom clean.
4. Vacuum carpeted surfaces and wax resilient flooring.
5. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures. Clean light fixtures, lamps, globes, and reflectors.
6. Clean Project site, yard, and grounds, in areas disturbed by construction activities. Sweep paved areas; remove stains, spills, and foreign deposits. Rake grounds to a smooth, even-textured surface.

3.6 DEMONSTRATION AND TRAINING

A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system. Include a detailed review of the following:

1. Include instruction for basis of system design and operational requirements, review of documentation, emergency procedures, operations, adjustments, troubleshooting, maintenance, and repairs.

END OF SECTION 01 70 00

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE (FOR FUTURE REFERENCE)

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data concrete mix designs and submittals required by ACI 301.

B. Ready-Mixed Concrete Producer Qualifications: ASTM C 94/C 94M.

C. Comply with ACI 301, "Specification for Structural Concrete"; ACI 117, "Specifications for Tolerances for Concrete Construction and Materials"; and CRSI's "Manual of Standard Practice."

PART 2 - PRODUCTS

2.1 MATERIALS

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.

B. Plain Steel Wire: ASTM A 82, as drawn.

C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.

D. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet.

E. Portland Cement: ASTM C 150, Type I or II.

F. Fly Ash: ASTM C 618, Type C or F.

G. Aggregates: ASTM C 33, uniformly graded.

H. Air-Entraining Admixture: ASTM C 260.

I. Chemical Admixtures: ASTM C 494. Do not use calcium chloride or admixtures containing calcium chloride.

J. Vapor Retarder: Clear 10-mil- thick polyethylene sheet.

K. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

L. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

M. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

SECTION 04 20 00 - UNIT MASONRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. See Division 5 Section "Metal Fabrications" for furnishing steel lintels and shelf angles for unit masonry.

B. Submittals:

1. Samples for face brick and colored mortar.
2. Material Certificates: For each type of product indicated. Include statements of material properties indicating compliance with requirements.

C. Comply with ACI 530.1/ASCE 6/TMS 602.

D. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections required by authorities having jurisdiction.

1. Inspections: Level 1 special inspections according to the IBC.
2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.

E. Sample Panels: Construct a sample wall panel approximately 48 inches long by 60 inches high to demonstrate aesthetic effects and set quality standards for materials and execution.

PART 2 - PRODUCTS

2.1 MASONRY UNITS

A. Face Brick: ASTM C 216, Grade SW, Type FBA.

1. Products:
   a. Match Existing
2. Size: Common modular.
3. Solid brick with exposed surfaces finished for ends of sills and caps.
4. Coursing: See Elevations for location of Soldier course.
5. Special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

2.2 MORTAR AND GROUT

A. Mortar: ASTM C 270, proportion specification: Type S.

1. Use portland cement-lime mortar.
2. Do not use calcium chloride in mortar.
3. Water-Repellent Additive: For mortar used with concrete masonry units made with integral water repellent, use product recommended by manufacturer of units.

B. Grout: ASTM C 476 with a slump of 8 to 11 inches.

2.3 REINFORCEMENT, TIES, AND ANCHORS

A. Steel Reinforcing Bars: ASTM A 615/A 615M or ASTM A 996/A 996M, Grade 60 (Grade 420).

B. Joint Reinforcement: ASTM A 951.

1. Coating: hot-dip galvanized.
2. Wire Size for Veneer Ties: 0.148-inch diameter.
3. For single-wythe masonry, provide either ladder design or truss design.

C. Veneer Anchors: Hot-dip galvanized steel, two-piece adjustable masonry veneer anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall, for attachment over sheathing to studs, and acceptable to authorities having jurisdiction.

1. Products:
   a. MasonPro - Type III or equal

2.4 EMBEDDED FLASHING MATERIALS

A. Rubberized Asphalt Sheet Flashing: Pliable, adhesive rubberized-asphalt compound, 26 mils thick, bonded to a polyethylene film, 4 mils thick, to produce an overall thickness of 30 mils. Use only where flashing is fully concealed.

2.5 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded strips complying with ASTM D 1056, Grade 2A1.

B. Preformed Control-Joint Gaskets: Designed to fit standard sash block and to maintain lateral stability in masonry wall; made from styrene-butadiene rubber or PVC.

C. Weep Holes: Cellular-plastic extrusion, full height and width of head joint.

D. Proprietary Acidic Masonry Cleaner: Product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units.

1. Products:
   a. MasonPro - Vana Trol or equal

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cut masonry units with saw. Install with cut surfaces and, where possible, cut edges concealed.

B. Mix units for exposed unit masonry from several pallets or cubes as they are placed to produce uniform blend of colors and textures.

C. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.

D. Stopping and Resuming Work: Rack back units; do not tooth.

E. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

F. Build non-load-bearing interior partitions full height and install compressible filler in joint between top of partition and underside of structure above.

G. Tool exposed joints slightly concave when thumbprint hard unless otherwise indicated.

H. Keep cavities clean of mortar droppings and other materials during construction.

3.2 LINTELS

A. Install lintels where indicated.

B. Minimum bearing of 8 inches at each jamb unless otherwise indicated.

3.3 FLASHING AND WEEP HOLES

A. Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to the downward flow of water in the wall, and where indicated.

B. Place through-wall flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing before covering with mortar.

1. Extend flashing 4 inches into masonry at each end and turn up 2 inches to form a pan.

C. Trim wicking material used in weep holes flush with outside face of wall after mortar has set.

3.4 CLEANING

A. Clean masonry as work progresses. Remove mortar fins and smears before tooling joints.

B. Final Cleaning: After mortar is thoroughly cured, clean exposed masonry.

1. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

END OF SECTION 04 20 00

SECTION 05 52 13 – PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Stainless steel pipe and tube railings

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.

C. Samples: Submit two 6 inch long samples of handrail.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Stainless – Steel Pipe and Tube Railings:
      a. Lavi Industries.
      b. C.R. Laurence Co., Inc.
      c. Approved equal.

2.2 METALS

A. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

B. Stainless Steel:
   1. Tubing: ASTM A 554, Grade MT 304.
   2. Pipe: ASTM A 312/A 312M, Grade TP 304.
   3. Castings: ASTM A 743/A 743M, Grade CF 8 or CF 20, CF 8M or CF 3M.
   4. Plate and Sheet: ASTM A 666, Type 304.
   5. Expanded Metal: ASTM F 1267, Type II (expanded and flattened), Class 3 (corrosion resistant steel), ASTM A 666, Type 304.
   6. Woven-Wire Mesh: Intermediate-crimp, 2-inch (50-mm) woven-wire mesh, made from 0.135-inch (3.5-mm) nominal diameter wire complying with ASTM A 580/A 580M, Type 304.

2.3 MISCELLANEOUS MATERIALS

A. Fasteners: Provide concealed fasteners, unless unavoidable or standard for railings indicated
   1. Stainless-Steel Railings: Type 304 stainless-steel fasteners

B. Anchors: Provide cast-in-place, chemical or torque-controlled expansion anchors, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488.

2.4 FABRICATION

A. General: Fabricate railings to comply with design, dimensions, and details indicated, but not less than that required to support structural loads.

B. Non-welded Connections: Connect members with concealed mechanical fasteners and fittings.

C. Form changes in direction by inserting prefabricated elbow fittings.

D. Close exposed ends of railing members with prefabricated end fittings.

E. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated.

F. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work, unless otherwise indicated.

2.5 FINISHES

A. Stainless Steel:
   1. Satin Finish.

2.6 RAILINGS - PERFORMANCE REQUIREMENTS

A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of ASTM E985 and applicable local code.

B. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 50 pounds per linear foot applied to the top of the assembly and in any direction, without damage or permanent set. This load to be designed to transfer through the supports to the structure.

C. Concentrated Loads: Design railing assembly, wall rails, and attachments to resist a concentrated force of 200 pounds applied at any point on the top of the assembly and in any 12106.01 / Crescent District Office 05 52 13 - 2 PIPE AND TUBE RAILINGS direction, without damage or permanent set. This load to be designed to transfer through the supports to the structure.

D. Allow for expansion and contraction of members and building movement without damage to connections or members.

E. Dimensions: See drawings for configurations and heights.

F. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.

2.7 STEEL RAILING SYSTEM

A. Steel Tube: ASTM A 500, Grade B cold-formed structural tubing.

B. Non-Weld Mechanical Fittings: Slip-on, galvanized malleable iron castings, for Schedule 40 pipe, with flush setscrews for tightening by standard hex wrench, no bolts or screw fasteners.

C. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.

D. Exposed Fasteners: No exposed bolts or screws.

E. Straight Splice Connectors: Steel concealed spigots.

2.8 FABRICATION

A. Accurately form components to suit specific project conditions and for proper connection to building structure.

B. Fit and shop assemble components in largest practical sizes for delivery to site.

C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.

D. Welded Joints:
1. Interior Components: Continuously seal joined pieces by continuous welds.
2. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.

B. Anchor railings securely to structure.

C. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

3.4 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION 05 52 13

SECTION 05 73 00 - ORNAMENTAL RAILINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Ornamental stainless steel cable railing system. (Rainier)

B. Ornamental stainless steel railing system with glass infill. (Glacier)

C. Ornamental stainless steel railing system with horizontal bars. (Olympus)

1.2 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

B. Section 06 43 16 - Wood Railings.

C. Section 08 83 13 - Mirrored Glass Glazing.

1.3 REFERENCES

A. ASTM International:
1. ASTM A 554 - Standard Specification for Welded Stainless Steel Mechanical Tubing.
2. ASTM A 492 - Standard Specification for Stainless Steel Rope Wire.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's specifications and technical data including the following:
1. Detailed specification of construction and fabrication.
2. Manufacturer's installation instructions.

C. Shop Drawings: Submit shop drawings for fabrication and installation. Include the following:
1. Plans, elevations, and detail sections.
2. Indicate materials, methods, finishes, and types of joinery, fasteners, anchorages, and accessory items.
3. Where materials or fabrications are indicated to comply with certain design loadings, include structural computations, material properties, and other information needed for structural analysis.

D. Samples: Prepare samples on metal of same alloy and thickness to be used for the Work.

E. Quality Control Submittals: Statement of manufacturer's qualifications.

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Not less than 10 years experience in the actual production of specified products.

B. Installer's Qualifications: Firm with demonstrated experience in installation of systems similar in complexity to those required for this Project.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards.

B. Store materials in manufacturer's original sealed, labeled packaging until ready for installation and in accordance with manufacturer's instructions. Protect from damage.

1.7 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 recommended limits.

1.8 WARRANTY

A. Manufacturer's Warranty: Provide manufacturer's standard 3 year limited warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: AGS Stainless, Inc. - Cable Rail, which is located at: 7873 N. E. Day Rd.; Bainbridge Island, WA 98110; Toll Free Tel: 888-842-9492; Tel: 206-842-9492; Fax: 206-842-8179 ; Email:request info (info@agsstainless.com); Web:www.agsstainless.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 SYSTEM DESCRIPTION - GENERAL

A. Custom, shop-fabricated stainless steel railing frame with mechanical fittings and attachment for field installation.

1. Infill: Horizontal cabling.

B. Shop fabricate such that no jobsite welding, grinding or cutting is required.

2.3 STAINLESS STEEL RAILING SYSTEMS

A. Stainless Steel Railing System: Clearview Railing System as manufactured by AGS Stainless, Inc.
1. Type: Rainier - Cable railing.

2. Structural Requirements: Fabricate integral railings and component connections to meet or exceed the requirements as set forth in the current, adopted ICC International Building Code (IBC), International Residential Code (IRC), or governing local code as applicable

B. Infill - Cables:
1. Material: ASTM A 492, stainless steel, Type 316.
2. Construction: 1 X 19.
3. Diameter: 1/8 inch (3 mm) diameter.
4. Lay: Left Hand Lang's.
5. Core: Stainless steel.
6. Cable provided in rolls for field cutting and a crimping; requires field attachment of fittings to ends.
7. Cables provided in lengths approximately six inches longer than required for their designated run with fitting attached at one end; requires one end of each length of

cable to be field cut and fittings field attached.
8. Cable provided cut to length with fittings attached at both ends.
9. Cable Fitting Materials for Exterior Applications: Stainless steel, Type 316.
10. Cable Fitting Materials for Interior Applications: Stainless steel, Type 304.
11. Cable Attachments: Factory, machine swaged.
12. Cable Attachments: Field, hand swaged.
13. Tensioning Method: Threaded terminals.

C. Hardware: Stainless steel construction; separate dissimilar materials with bushings, grommets or washers to prevent electrolytic corrosion.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

B. Do not proceed with installation until substrates have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Commencement of installation constitutes acceptance of conditions.

3.2 INSTALLATION

A. Install railing system plumb, level, and true and in accordance with manufacturer's installation instructions and recommendations.

B. Do not tighten the cables more than what is necessary to eliminate any sag.

C. Provide anchorage devices and fittings to secure to in-place construction to adjacent construction. Separate dissimilar materials with bushings, grommets or washers to prevent electrolytic corrosion.

D. Do not cut components, except for cable as required for installation, or abrade component finishes. Field touch-up of finishes only acceptable if done as per manufacturer's recommendations. Return components with damaged finishes to shop for required alterations according to manufacturer's return policy, followed by complete refinishing or provide new components.

E. Secure mounting brackets to building structure in a positive manner using manufacturer recommended reinforcement and anchorage methods for substrate conditions. Locate brackets and hardware at spacing required to support structural loads.

F. Installation of railing system shall be rigid and secure, installed by mechanics experienced in erection of architectural metal. Mounting hardware shall be drawn up tightly. Rails shall be set plumb and aligned.

END OF SECTION

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for treated wood, engineered wood products, and metal framing anchors.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Provide dressed lumber, S4S, 19 percent maximum moisture content for 2-inch nominal thickness or less, marked with grade stamp of inspection agency.

B. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

C. Wood Structural Panels: DOC PS 2. Provide plywood complying with DOC PS 1, where plywood is indicated.

1. Comply with "Code Plus" provisions in APA Form No. E30K.

2.2 TREATED MATERIALS

A. Preservative-Treated Materials: AWPA C2 lumber and AWPA C9 plywood, labeled by an inspection agency approved by ALSC's Board of Review. After treatment, kiln-dry lumber and plywood to 19 and 15 percent moisture content, respectively. Treat indicated items and the following:

1. Wood members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Concealed members in contact with masonry or concrete.
3. Wood framing members less than 18 inches above grade.
4. Wood floor plates installed over concrete slabs directly in contact with earth.

2.3 LUMBER

A. Dimension Lumber: The following grades are per inspection agency indicated:

1. Framing Other Than Non-Load-Bearing Partitions: No. 2 Southern pine: SPIB.
2. Exposed Framing: No. 1 Southern pine: SPIB.

B. Miscellaneous Lumber: Construction, grade of any species for nailers, blocking, and similar members.

2.4 PANEL PRODUCTS

A. Wall Sheathing:

1. Plywood: Exposure 1.
2. Oriented Strand Board: Exposure 1.
3. Fiberglass – Mat Faced Gypsum Sheathing: DensGlass Sheathing

B. Telephone and Electrical Equipment Backing Panels: Plywood, Exposure 1, C-D Plugged, fire-retardant treated, not less than 1/2 inch thick.

2.5 MISCELLANEOUS PRODUCTS

A. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153.

1. Power-Driven Fasteners: CABO NER-272.
2. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

B. Metal Framing Anchors: Hot-dip galvanized steel of structural capacity, type, and size indicated.

C. Building Wrap: Refer to SECTION 07 25 00 – WEATHER BARRIERS

D. Sill-Sealer: Glass-fiber insulation, 1-inch thick, compressible to 1/32 inch.

E. Adhesives for Field Gluing Panels to Framing: APA AFG-01.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Securely attach rough carpentry to substrates, complying with the following:

1. CABO NER-272 for power-driven fasteners.
2. Published requirements of metal framing anchor manufacturer.
3. TABLE 2304.9.1, "FASTENING SCHEDULE" in the International Building Code.

C. Fastening Methods: Comply with recommendations in APA Form No. E30K and the following:
1. Sheathing: Nail to framing.

END OF SECTION 06 10 00

SECTION 06 16 00 - SHEATHING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for preservative treated plywood.

PART 2 - PRODUCTS

2.1 WOOD PANEL PRODUCTS, GENERAL

A. Plywood: DOC PS 1.

B. Oriented Strand Board: DOC PS 2.

2.2 TREATED PLYWOOD

A. Preservative-Treated Plywood: AWPA C9.

1. Use treatment containing no arsenic or chromium.
2. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.

B. Provide preservative-treated plywood for items indicated on Drawings and plywood in contact with masonry or concrete or used with roofing, flashing, vapor barriers, and waterproofing.

C. Fire-Retardant-Treated Plywood: Comply with performance requirements in AWPA C27, labeled by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Use Exterior type for exterior locations and where indicated.
2. Use Interior Type A, High Temperature (HT) for roof sheathing and where indicated.
3. Use Interior Type A unless otherwise indicated.
4. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction.

D. Provide fire-retardant-treated plywood for plywood items indicated on Drawings.

2.3 WALL SHEATHING

A. Plywood Wall Sheathing: Exterior, Structural I sheathing.

B. Oriented Strand Board Wall Sheathing: Exposure 1, Structural 1 sheathing.

C. Fiberglass – Mat Faced Gypsum Sheathing: DensGlass Sheathing.

D. Gypsum Wall Sheathing:

1. Paper-Surfaced Gypsum Wall Sheathing: ASTM C 79/C 79M or ASTM C 1396/C 1396M, gypsum sheathing; with water-resistant-treated core.

E. Fiberboard Wall Sheathing: AHA A194.1, Type IV, Grade 1 (Regular), 1/2 inch thick.

2.4 MISCELLANEOUS PRODUCTS

A. Fasteners: Size and type indicated.

1. For wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
2. Power-Driven Fasteners: CABO NER-272.

B. Sheathing Joint-and-Penetration Treatment Materials:
1. Sheathing Tape for Foam-Plastic Sheathing: Pressure-sensitive plastic tape recommended by sheathing manufacturer for sealing joints and penetrations in sheathing.

C. Adhesives for Field Gluing Panels to Framing: APA AFG-01

PART 3 - EXECUTION

3.1 INSTALLATION

A. Securely attach to substrates, complying with the following:

1. CABO NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in the IBC.

B. Fastening Methods:

1. Wall and Roof Sheathing:

a. Nail to wood framing.
b. Screw to cold-formed metal framing.

END OF SECTION 06 16 00

SECTION 06 20 00 - FINISH CARPENTRY

PART 1 - GENERAL

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20 and grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.

B. Softwood Plywood: DOC PS 1.

C. Hardwood Plywood: HPVA HP-1.

2.2 EXTERIOR FINISH CARPENTRY

A. Exterior Trim: Smooth finish cement board trim of same manufacturer as described in Section 07 46 46 – FIBER CEMENT SIDING.

2.3 INTERIOR STANDING AND RUNNING TRIM

A. Interior Softwood Lumber Trim: C Select (Choice), eastern white, Idaho white, lodgepole, ponderosa, or sugar pine.

B. Wood Moldings: WMMPA WM 4 made to patterns in WMMPA WM 12 from kiln-dried stock.

1. Softwood Moldings for Transparent Finish: Eastern white, Idaho white, lodgepole, ponderosa, radiata, sugar pine, or Southern pine.
2. Moldings for Painted Finish: P-Grade.
3. Base: WM base; see interiors.
4. Shoe Mold: WM 126, see interiors.
5. Chair Rail: WM 297; see interiors.

2.4 SHELVING AND CLOTHES RODS

A. Shelving: vinyl coated wire systems; located in pantry and in classroom storage closets. Pantry will receive 3 sets of "L" shaped vinyl coated wire shelving systems. Each storage closet will receive one shelf running the length of the closet.

B. Shelf Brackets with Rod Support: BHMA A156.16, B04051; prime-painted formed steel.

C. Clothes Rods: N/A

2.5 MISCELLANEOUS MATERIALS

A. Fasteners for Exterior Finish Carpentry: Use manufacturers recommended fastening in all cases

PART 3 - EXECUTION

3.1 INSTALLATION

A. Condition finished carpentry in installation areas for 24 hours before installing.

B. Prime and backprime lumber for painted finish exposed on the exterior.

C. Install finish carpentry level, plumb, true, and aligned with adjacent materials. Scribe and cut to fit adjoining work. Refinish and seal cuts.

D. Install standing and running trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Stagger joints in adjacent and related trim. Cope at returns and miter at corners.

E. Nail siding at each stud. Do not allow nails to penetrate more than one thickness of siding, unless otherwise recommended by siding manufacturer. Seal joints at inside and outside corners and at trim locations.

END OF SECTION 06 20 00

SECTION 06 40 23 - INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data for solid-surfacing materials, Shop Drawings and Samples showing the full range of colors, textures, and patterns available for each type of finish.

B. Quality Standard: Architectural Woodwork Institute's "Architectural Woodwork Quality Standards."

C. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is completed, and HVAC system is operating.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Softwood Plywood: DOC PS 1.

B. Hardwood Plywood and Face Veneers: HPVA HP-1 made with adhesive containing no urea formaldehyde.

C. High-Pressure Decorative Laminate: NEMA LD 3.

1. Products:

a. See Finish Schedule

D. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.

1. Products:

a. See drawings for finish selections and locations.

2.2 CABINET HARDWARE AND ACCESSORY MATERIALS

A. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 170 degrees of opening, self-closing.

B. Wire Pulls: Back mounted, solid metal, 3 inches long. Basis of Design is Amerock Allison collection; satin nickel finish.

C. Catches: Magnetic catches, BHMA A156.9, B03141

D. Adjustable Shelf Standards and Supports: BHMA A156.9, B03014; with shelf rests

E. Drawer Slides: BHMA A156.9, B05091; Heavy Duty

1. Box Drawer Slides: Grade 1HD-100.

2. File Drawer Slides: Grade 1HD-200.
3. Pencil Drawer Slides: Grade 1.

F. Grommets for Cable Passage through Countertops: 2-inch OD, molded-plastic grommets and matching plastic caps with slot for wire passage. Verify locations in shop drawings.

G. Exposed Hardware Finishes: Comply with BHMA A156.18 for BHMA code number indicated.

1. Finish: Satin Stainless Steel: BHMA 630

H. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to 15 percent moisture content.

2.3 INTERIOR WOODWORK

A. Complete fabrication to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

B. Backout or groove backs of flat trim members and kerf backs of other wide, flat members, except for members with ends exposed in finished work.

C. Interior Standing and Running Trim for Transparent Finish: Premium grade, made from red oak, plain sawn.

D. Interior Ornamental Work for Transparent Finish: Premium grade, made from red oak, plain sawn.

E. Wood Cabinets for Transparent Finish: Premium grade.

1. AWI Type of Cabinet Construction: Flush overlay.
2. WI Construction Style: Style A, Frameless.
3. WI Door and Drawer Front Style: Flush overlay.
4. Wood Species and Cut for Exposed Surfaces: Red oak, plain sawn or sliced.
5. Grain Direction: Vertically for drawer fronts, doors, and fixed panels.
6. Matching of Veneer Leaves: Random match.
7. Veneer Matching within Panel Face: Running match.

F. Plastic-Laminate Cabinets: Custom grade.

1. AWI Type of Cabinet Construction: Flush overlay
2. Laminate Cladding: Horizontal surfaces other than tops, HGS; postformed surfaces, HGP; vertical surfaces, HGS; Edges, HGS; semiexposed surfaces, VGS
3. Drawer Sides and Backs: Solid hardwood
4. Drawer Bottoms: Hardwood plywood

G. Plastic-Laminate Countertops: Custom grade.

1. Laminate Grade: HGS for flat countertops, HGP for post-formed countertops.
2. Grain Direction: Parallel to cabinet fronts.

3. Edge Treatment: Same as laminate cladding on horizontal surfaces or Lumber edge for transparent finish matching wood species and cut on cabinet surfaces. Refer to casework elevations for countertops requiring lumber edge treatment
4. Wet surface areas to be built of marine grade plywood.

H. Solid-Surfacing Material Countertops: Custom grade.

1. Solid-Surfacing Material Thickness: 1/2 inch (13 mm)
2. Fabricate tops in one piece with shop-applied backsplashes and edges.
3. Install integral sink bowls in countertops in shop.
4. Wet surface areas to be built of marine grade plywood.

2.4 SHOP FINISHING OF INTERIOR ARCHITECTURAL WOODWORK

A. Finishes: Same grades as items to be finished.

B. Finish architectural woodwork at the fabrication shop; defer only final touch up until after installation.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.

B. Install woodwork to comply with referenced quality standard for grade specified.

C. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm).

D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Fasten with countersunk concealed fasteners and blind nailing. Use fine finishing nails or finishing screws for exposed nailing, countersunk and filled flush with woodwork.

F. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 36 inches (900 mm) long, except where shorter single-length pieces are necessary. Scarf running joints and stagger in adjacent and related members.

G. Cabinets: Install so doors and drawers are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.

H. Anchor countertops securely to base units. Seal space between backsplash and wall.

END OF SECTION 06 40 23

SECTION 06 41 16 – PLASTIC LAMINATE FACED ARCHITECTURAL CABINETS

PART 1 - GENERAL

3.1 RELATED DOCUMENTS

A. Submittals: Product Data and material Samples.

1.2 SUMMARY

A. Section Includes:
   1. Plastic-laminate-faced architectural cabinets.
   2. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets unless concealed within other construction before cabinet installation.

B. Related Requirements:
   1. Section 06 10 00 "Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing cabinets and concealed within other construction before cabinet installation.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product, including panel products, high-pressure decorative

B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
   1. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
   2. Show locations and sizes of cutouts and holes for electrical switches and outlets and other items installed in architectural plastic-laminate cabinets.
   3. Apply WI Certified Compliance Program label to Shop Drawings.

C. Samples for Initial Selection:
   1. Plastic laminates.
   2. PVC edge material.
   3. Thermoset decorative panels.

D. Samples for Verification: Plastic laminates, 8 by 10 inches, for each color, pattern, and surface finish, with sample applied to core material and specified edge material applied to one edge.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and fabricator.

B. Product Certificates: For each type of product.

C. Woodwork Quality Standard Compliance Certificates: WI Certified Compliance Program certificates.

1.5 QUALITY ASSURANCE

D. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in service performance. Shop is a licensee of WI's Certified Compliance Program.

E. Installer Qualifications: Licensee of WI's Certified Compliance Program.

F. Testing Agency Qualifications: For testing agency providing classification marking for fire retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver cabinets until painting and similar operations that could damage woodwork have been completed in installation areas. If cabinets must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.7 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Field Measurements: Where cabinets are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
   1. Locate concealed framing, blocking, and reinforcements that support cabinets by field measurements before being enclosed, and indicate measurements on Shop Drawings.

C. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.8 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that cabinets can be supported and installed as indicated.

PART 2 - PRODUCTS

3.1 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of architectural plastic-laminate cabinets indicated for construction, finishes, installation, and other requirements.
   1. Provide labels and certificates from WI certification program indicating that woodwork complies with requirements of grades specified.
   2. The Contract Documents may contain selections chosen from options in the quality standard and additional requirements beyond those of the quality standard. Comply with those selections and requirements in addition to the quality standard.

B. Grade: Custom

C. Type of Construction: Frameless

D. Cabinet, Door, and Drawer Front Interface Style: Flush overlay.

E. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by woodwork quality standard.
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Formica Corporation.
      b. Wilsonart International; Div. of Premark International, Inc.

F. Laminate Cladding for Exposed Surfaces:
   1. Horizontal Surfaces: Grade HGS.
   2. Postformed Surfaces: Grade HGP.
   3. Vertical Surfaces: Grade HGS.
   4. Edges: PVC edge banding, 0.12 inch (3 mm) thick, matching laminate in color, pattern, and finish.
   5. Pattern Direction: Vertically for doors and fixed panels, horizontally for drawer fronts.

G. Materials for Semi-exposed Surfaces:
   1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, NEMA LD 3, Grade CLS.
      a. Edges of Plastic-Laminate Shelves: PVC edge banding, 0.12 inch (3 mm) thick, matching laminate in color, pattern, and finish.
      b. For semi-exposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS.
   2. Drawer Sides and Backs: Solid-hardwood lumber.
   3. Drawer Bottoms: Hardwood plywood.

H. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.

I. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.
   1. Join subfronts, backs, and sides with glued dovetail joints.

J. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
   1. As selected by Architect from laminate manufacturer's full range of colors and patterns.

3.2 WOOD MATERIALS

A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.
   1. Wood Moisture Content: 4 to 9 percent.

B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.
   1. Softwood Plywood: DOC PS 1, medium-density overlay.
   2. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1, made with adhesive containing no urea formaldehyde.

3.3 CABINET HARDWARE AND ACCESSORIES

A. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 170 degrees of opening, self-closing.

B. Back-Mounted Pulls: BHMA A156.9, B02011.

C. Wire Pulls: Back mounted, solid metal, 3 inches long. Basis of Design is Amerock Allison collection; satin nickel finish.

D. Catches: Magnetic catches, BHMA A156.9, B03141.

E. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.

F. Shelf Rests: BHMA A156.9, B04013; metal, two-pin type with shelf hold-down clip.

G. Drawer Slides: BHMA A156.9.
   1. Grade 1HD-100 and Grade 1HD-200: Side mounted; full-extension type; zinc-plated steel ball-bearing slides.
   2. For drawers more than 3 inches (75 mm) high but not more than 6 inches (150 mm) high and not more than 24 inches (600 mm) wide, provide Grade 1HD-100.
   3. For drawers more than 6 inches (150 mm) high or more than 24 inches (600 mm) wide, provide Grade 1HD-200.

H. Tempered Float Glass for Cabinet Doors: ASTM C 1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3, 6 mm thick unless otherwise indicated.

I. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
   1. Satin Stainless Steel: BHMA 630.

J. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

3.4 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage.

B. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrousmetal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

C. Adhesives: Use adhesives that meet the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. Sealant: Use sealant recommended by plastic paneling manufacturer and complying with requirements in Division 07 Section "Joint Sealants."

3.5 FABRICATION

A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.

B. Fabricate cabinets to dimensions, profiles, and details indicated.

C. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

D. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

E. Install glass to comply with applicable requirements in Section 08 80 00 "Glazing" and in GANA's "Glazing Manual." For glass in wood frames, secure glass with removable stops.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition cabinets to average prevailing humidity conditions in installation areas.

B. Before installing cabinets, examine shop-fabricated work for completion and complete work as required.

3.2 INSTALLATION

A. Grade: Install cabinets to comply with same grade as item to be installed.

B. Assemble cabinets and complete fabrication at Project site to the extent that it was not completed in the shop.

C. Install cabinets level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm).

D. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork.
   1. Use filler matching finish of items being installed.

F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
   1. Install cabinets with no more than 1/8 inch in 96-inch (3 mm in 2400-mm) sag, bow, or other variation from a straight line.
   2. Fasten wall cabinets through back, near top and bottom, and at ends.

3.3 ADJUSTING AND CLEANING

A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.

C. Clean cabinets on exposed and semiexposed surfaces.

END OF SECTION 06 41 16

SECTION 067300 - FIBER-REINFORCED HYBRID DECKING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fiber reinforced hybrid decking and sleeper systems finished with stain and sealers for exterior applications.

1.2 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete.

B. Section 04 20 00 - Unit Masonry.

C. Section 06 10 00 - Rough Carpentry.

D. Section 07 10 00 - Dampproofing and Waterproofing.

E. Section 09 90 00 - Painting and Coating.

F. Section 31 10 00 - Site Clearing.

1.3 REFERENCES

A. ASTM International (ASTM):
1. ASTM E 84-11a - Standard Test Method for Surface Burning Characteristics of Building Materials.
2. ASTM D 1037-2006a - Standard Test Methods for Evaluating Properties of Wood-Based Fiber and Particle Panel Materials.
3. ASTM D 1413-2007e1 - Standard Test Method for Wood Preservatives by Laboratory Soil Block Cultures
4. ASTM F 1679-04 - Standard Test Method for Using a Variable Incidence Tribometer (VIT)
5. ASTM D 2047 - 2011 - Standard Test Method for Static Coefficient of Friction of Polished-Coated Flooring Surfaces as Measured by the James Machine.
6. ASTM D 2395-2002: Standard Test Methods for Density and Specific Gravity (Relative Density) of Wood and Wood-Based Materials.
7. ASTM D 2565- (Reapproved 2008), Practice for Operating Xenon-Arc-Type Light- Exposure Apparatus With and Without Water for Exposure of Plastics.
8. ASTM D 5071-06 Standard Practice for Exposure of Photodegradable Plastics in a Xenon Arc Apparatus.
9. ASTM D 696 - Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30 degrees C and 30 Degrees C With a Vitreous Silica Dilatometer ; 2008.
10. ASTM D 2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine; 2004.

B. AWPA E1-09, Standard Method for Laboratory Evaluation to Determine Resistance to Subterranean Termites.

C. AWPA E10-11 Standard Method of Testing Wood Preservatives by Laboratory Soil Block Cultures.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. LEED Reports:
1. Submit documentation to verify TruGrain products meet LEED requirements to Project LEED Administrator and other project team members as requested.
2. Innovation in Design submittal to USGBC to be executed during pre-design. USGBC is the final decision making body for Credit attainment.

D. Shop Drawings: Indicate substrate deck framing system, loads and cambers, bearing details, and framed openings.

E. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
1. Samples of Fiber Reinforced Hybrid Decking Exposed to View: Submit samples, 5.5 inches by 12 inches (140 mm by 305 mm) in size illustrating surface texture, stain, and finish.

F. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.
1. Samples of Fiber Reinforced Hybrid Decking Exposed to View: Submit two samples, 5.5 inches by 12 inches (140 mm by 305 mm) in size illustrating specified surface texture, stain, and finish.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years of code compliant products for 10 years.

B. Material Disclosures Required:
1. Health Product Declaration

C. Installer Qualifications: Minimum 2 year experience installing similar products.

D. LEED Prerequisites and Credits: LEED for New Construction, Version 3 (2009).
1. SS Credit 7.1: Heat Island Effect-Non Roof.
a. Decking can qualify as a non-roof strategy for reducing the urban heat island effect due to the qualifying Solar Reflectance Index value of certain colors of the Resysta 2K Sealer RFS.
b. To meet the credit requirements, 50% of hardscaped areas of the developed area must have an SRI value of 29 or better, including walkways and covered parking areas.
2. MR Credit 5: Regional Materials, 10% or 20% Manufactured Regionally 1-2 points.
a. Use a minimum of 10% or 20% of the combined value of construction materials and products that are manufactured regionally within a radius of 500 miles (805 km). Materials must be extracted, processed,

manufactured, and installed all within a 500 mile (805 km) radius of the job site. If only a fraction of a product or material is extracted, harvested or recovered and manufactured locally, then only that percentage (by weight) must contribute to the regional value.

b. Include calculations demonstrating that the project incorporates the required percentage of regional materials/products and showing their cost, percentage of regional components, distance from project to manufacturer, and the total cost of all materials for the project.

c. TruGrain manufacturing facilities are located in the following zip code: 47620.

3. MR Credit 6: Rapidly Renewable Materials, 1 point.
   a. TruGrain decking is made from 25% rice husks, and 60% by volume of the mixture of the proprietary Active Resysta Fiber (ARF).
   b. Rice husks are plants harvested within a 10 year cycle.
   c. TruGrain products can contribute toward the 2.5% threshold of total value of rapidly renewable materials used in the project, based on cost.
4. ID/MR Credit 1: Rapidly Renewable Materials 5%, 1 point.
   a. TruGrain products have a high percentage of rapidly renewable materials providing projects teams the opportunity for exemplary performance in material selection.
5. ID/MR Credit 2: Building Product Disclosure and Optimization - Material Ingredients, 1 point.
   a. Option 1: Material Ingredient Reporting: TruGrain products come with a Health Product Declaration.

E. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Finish areas designated by Architect.
   2. Do not proceed with remaining work until workmanship is approved by Architect.
   3. Refinish mock-up area as required to produce acceptable work.

1.6 PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to starting work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store in ventilated areas with constant minimum temperature of 60 degrees F (16 degrees C) and maximum relative humidity of 55 percent.

1.8 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 recommended limits.

1.9 SEQUENCING

A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.10 WARRANTY

A. Manufacturer shall provide a fifteen year manufacturer warranty for commercial

applications or twenty-five years manufacture warranty for residential applications on materials. TruGrain warrants the products shall be free from defects in workmanship and materials that (1) occur as a direct result of the manufacturing process, (2) occur during the warranty period and (3) have structural damage or fungal decay.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: TruGrain, which is located at: 2801 Post Oak Blvd.; Houston, TX 77056; Toll Free Tel: (866) 423-2385; Tel: (713) 585-2570; Fax: (713) 343-8440; Email: request info (); Web: http://www.tru-grain.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 MATERIALS

A. Materials: TruGrain products contain Resysta, a bio-based wood substitute made of ARF (Active Resysta Filler). ARF is a proprietary blend of rice husks (60 percent by volume of recycled content) that would otherwise become landfill waste, common salt, and mineral oil.
   1. Properties:
      a. Bending Strength: 4,696 psi per ASTM D 790.
      b. Bending E-Modulus: 535,600 psi per ASTM D 790.
      c. Tensile Strength: 3,162 psi per ISO 527.
      d. Tensile E-Modulus: 339,440 psi per ISO 527.
      e. Screw Withdrawal: 1,299 lbf.
         1) Screw extension stability according to ASTM E 330.
            a) Axial extraction force: 609,456 psi (4202 N/sq.mm).
            b) Axial extraction resistance: 40,615 psi (280 N/sq.mm).
      f. Thermal Conductivity (DIN EN 12664): 1.38 BTU-in/hr-sq.ft. (ca. 0.199 W/(mK)).
      g. Coefficient of Linear Thermal Expansion (ASM 696): 0.0000656 ft./ft. degrees F (3.6x10(-5) m/m degrees C).
      h. Density (Approximate): 1.46 g/cm3
      i. Moisture Effect: Product does not absorb moisture.
      j. Fungal Decay Resistance (AWPA E 10-11): No attack by test fungi, highest durability class 1.
      k. Weathering (ASTM D 2565): No cracks, blisters or other visible changes after 1500 hours.
      l. Emissions:
         1) LGA Tested (Passed).
         2) Formaldehyde emission: <0.01 ppm.
         3) PCP (pentachlorophenol): <8 x 10-6 oz. lb.
         4) TeCP (tetrachlorophenol): <8 x 10-6 oz. lb.
         5) DEHP (Diethylhexylphtalate): <0.05 %.
         6) BBP (Benzylbutylphtalate): <0.05 %.
         7) DBP (Di-n-butylphtalate): <0.05%.
         8) PAH (Polycyclic aromatic hydrocarbons) skin contact under 30 sec. total: 10 mg/kg.
         9) Benzo(a)pyrene: 10 mg/kg.
         10) Cadmium: 0.005%.
   2. Rapidly Renewable Materials: 60 percent.

B. Decking:
   1. Deck Profile: Gold.

a. Size: 1 inch (24.8 mm) thick, 5-1/2 inches (140 mm) wide hollow core board with internal ribs.
b. Texture: Sanded both sides; one side with radius
1) Place radius or non-radius side as the walking surface as indicated on drawings

2. Deck Profile: Platinum
a. Size: 1 inch (25.4 mm) thick, 5-1/2 inches (140 mm) wide hollow core board with internal ribs.
b. Texture: Sanded both sides; one side with parallel grooves running the length of the deck board
1) Place flat side or groove side as the walking surface as indicated on drawings

3. Deck Profile: T&G Porch.
a. Size: 1 inch (25.4 mm) thick, 3.2 inches (81 mm) wide hollow core board with internal ribs.
b. Texture: Sanded on one side only
1) Place sanded side as walking surface as indicated on drawings
2) Tongue & Groove installation style

4. Deck Profile: Jetty.
a. Size: 1-1/2 inches (38 mm) thick, 5-1/2 inches (140 mm) wide hollow core board with internal ribs.
b. Texture: Sanded on both sides; one side with parallel grooves running the length of the deck board
1) Place flat side or groove side as walking surface as indicated on drawings

5. Deck Profile: Dock.
a. Size: 0.976 inch (24.8 mm) thick, 5-1/2 inches (140 mm) wide hollow core board with internal ribs.
b. Texture: Sanded on both sides; one side with radius
1) Place radius or non-radius side as walking surface as indicated on drawings

6. Decking Field Boards and Perimeter boards: Manufacturer's proprietary hollow core floor decking with hidden fasteners.
a. Slip Index: (ASTM F 1679-04):
1) Longitudinal (Dry): 0.720.
2) Longitudinal (Wet): 0.975.
3) Transverse (Dry): 0.748.
4) Transverse (Wet): 0.993.

7. End Plates, Perimeter Boards:
a. Size: 3/4 inch (19 mm) thick, 2-3/4 inches (70 mm) wide solid board.
b. Texture: Sanded.

8. Edge Cap:
a. Size: 1/2 inch (12 mm) thick, 1/2 inch (12 mm) wide solid board.
b. Texture: Sanded.

9. Fascia Board, Perimeter Boards:
a. Size: 1/2 inch (12 mm) thick, 8 inch (203 mm) wide solid board
b. Texture: Sanded

10. Sleeper Joists (Runner for concrete surface only):
a. Size: 1 inch (25 mm) thick, 1-1/2 inches (38 mm) wide hollow core board with internal ribs.
b. Texture: Unsanded.

2.3 ACCESSORIES

A. Substructure Frame:
1. Standard wood frame substructure.

2. DexSpan extruded aluminum deck and dock framing systems.

B. Fasteners and Anchors:
1. Fastener Type and Finish: Plastic clips with provided stainless steel screws for coastal regions; coated steel clips with provided treated screws for all areas (steel clips shall only be used on treated lumber substructure). Stainless steel corrosion resistant type #10 x 2-1/2 inches wood screws for hidden face fastening applications. Comply with manufacturer's installation guides.
2. Fastener Type and Finish for Hybrid Decking: Stainless steel, type as recommended by manufacturer.

C. Accessory Components: 1/2 inch diameter Dowel, Fascia board, edge guard, and end cap of same material and finish as decking or adjacent trim as indicated on Drawings.

2.4 FINISH

A. Stain and Sealer:
1. Manufacturer: Resysta or AquaSurTech.
2. Color and Gloss: As selected by Architect from manufacturer's standard colors.
3. Color and Gloss: _____.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine substrate conditions before beginning installation; verify dimensions and acceptability of substrate.
1. Determine substrate was installed to accommodate all loads imposed upon it by the TruGrain Fiber Reinforced Decking and components supplied by other parties.

B. Do not proceed with installation until unacceptable conditions have been corrected.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

D. If the decking is being installed in a location where the air gap below the decking is equal to or less than 6 inches (152 mm) from the underside of the decking substructure to the ground / solid structure the joist spacing shall be reduced to 12 inches (305 mm) center-to-center. Comply with manufacturer's installation guidelines.

3.2 PREPARATION

A. Coordinate placement of bearing items.

B. Apply one coat of bituminous paint to concealed surfaces that will be in contact with cementitious or dissimilar materials.

C. Do not install materials until site pre-finishing is complete and dry.

3.3 INSTALLATION - BOARD DECKING

A. Install sleepers, decking, trim and accessories per manufacturer's recommendations.

B. Apply finish stain to individual decking planks and trim prior to installation before or after installation.

C. Install decking perpendicular to framing members, with ends staggered over minimum 1-1/2 inches (38 mm) minimum firm bearing.

D. Always take into account the expansion/contraction of TruGrain material and plan gaps at board abutment joints, termination points, and trim locations accordingly. Comply with manufacturer's installation guidelines.

E. Secure with manufacturer's proprietary fastener system. Refer to TruGrain Decking Installation Instructions for fasteners appropriate for the design and field conditions.
1. Non-Visible Stainless Steel Screw with TruGrain Dowel.
2. Metal Clip.
3. Plastic Clip.

F. Cut decking to accommodate roof drain and flange.

G. Framing and decking shall be installed using the manufacturer's recommended joist spacing for the specific decking product being installed. If the decking is to be installed at any angle with respect to the framing substructure the maximum joist spacing must be reduced to maintain joist spacing along the length of the decking boards.

H. Touch-up prefinished stained surfaces that are disfigured. Unsightly touch-up wall require removal and replacement of affected decking

I. Sand work smooth with 24-36 grit sandpaper for color uniformity prior to staining.

3.4 TOLERANCES

A. Surface Flatness of Decking Without Load: 1/4 inch in 10 feet (2 mm/m) maximum, and 1/2 inch in 30 feet (12 mm / 9 m) maximum.

3.5 CLEANING

A. Clean installation per manufacturer recommendations.

B. Provide Owner with two copies of cleaning and maintenance instructions.

3.6 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 21 00 – THERMAL INSULATION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals:
1. Product Data: For each type of product indicated, provide data on materials, describing insulation properties, surface burning characteristics, and other product test reports
2. Manufacturer's installation instructions: Indicate special procedures, perimeter conditions requiring special treatment

PART 2 - GENERAL

2.1 INSULATION PRODUCTS

A. Surface-Burning Characteristics: ASTM E 84, and as follows:

1. Flame-Spread Index: 25 or less where exposed; otherwise, as indicated in Part 2 "Insulation Products" Article.
2. Smoked-Developed Index: 450 or less.

B. Foil-Faced Polyisocyanurate Board Insulation: ASTM C 1289, Type I, Class 1 or 2, faced on both sides with aluminum foil, with flame-spread index of 75 or less for unfaced core material.

C. Mineral-Fiber-Blanket Insulation: ASTM C 665, Type III, Class A, foil-scrim-polyethylene vapor-retarder membrane on one face with fibers manufactured from glass fibers, with flame-spread index of 25 or less. Shall apply to sound batt insulation as well.

2.2 ACCESSORIES

A. Sheet Radiant Barrier: ASTM C 1313, foil on one side, flame-spread index of 25 or less, and water-vapor transmission of 1 perm, maximum.

B. Vapor Retarder: Polyethylene or equal.

C. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed to fit between roof framing members and to provide cross-ventilation between attic spaces and vented eaves.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install insulation in areas and in thicknesses indicated or required to produce R-values indicated. Cut and fit tightly around obstructions and fill voids with insulation.

B. Except for loose-fill insulation and insulation that is friction fitted in stud cavities, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

C. Place loose-fill insulation to comply with ASTM C 1015.

1. Comply with the CIMA's Special Report #3, "Standard Practice for Installing Cellulose Insulation."

D. Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage. Locate seams at framing members, overlap, and seal with tape.

END OF SECTION 07 21 00

SECTION 072430 – EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Comply with EIFS Industry Members Association's (EIMA) "EIMA Guideline Specification for Exterior Insulation and Finish Systems (EIFS) Class PB" with impact classification and range per EIMA 101.86 of High Impact Resistance: 90-150 inch-lb.

B. Structural Performance: Provide prefabricated panels capable of withstanding design loads without deflections greater than 1/240 of the panel height.

C. Submittals: Product Data, model code evaluation report and Samples of finishes.

1. For prefabricated panels, submit Shop Drawings and structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

D. Installer Qualifications: Certified in writing by system manufacturer.

PRODUCTS

1.2 MANUFACTURERS

A. Sto World Wide – Stotherm E.I.F.S. or equal

1.3 MATERIALS

A. Metal Framing for Prefabricated Panels: Comply with requirements in Division 9 Section "Non-Load Bearing Steel Framing."

B. Sheathing: Glass-mat gypsum sheathing, ASTM C 1177/C 1177.

C. Building Wrap: Air-retarder sheeting made from polyolefins; cross-laminated films, woven strands, or spun-bonded fibers; coated or uncoated; with or without perforations; and complying with ASTM E 1677, Type I.

D. Drainage Mat: Self-furring PVC mesh lath designed to drain moisture by gravity; EIFS manufacturer's standard or product recommended in writing by EIFS manufacturer.

A. Spacers: Closed-cell PE or Self-furring PVC mesh lath furring strips; EIFS manufacturer's standard or product recommended in writing by EIFS manufacturer.

B. Molded-Polystyrene Board Insulation: ASTM C 578, Type I, complying with EIMA's "EIMA Guideline Specification for Expanded Polystyrene (EPS) Insulation Board."

C. Reinforcing Mesh: Balanced, alkali-resistant, open-weave glass-fiber mesh treated for compatibility with other system materials, complying with ASTM D 578, and with minimum weight not less than 9.5 oz./sq. yd..

D. Base-Coat Materials: EIFS manufacturer's standard mixture of portland cement complying with ASTM C 150, Type I, and polymer-emulsion adhesive designed for use indicated.

E. Finish-Coat Materials: EIFS manufacturer's standard acrylic-based coating, consisting of polymer-emulsion binder, colorfast mineral pigments, sound stone particles, and fillers.

EXECUTION

2.2 INSTALLATION

A. Comply with ASTM C 1397 and EIFS manufacturer's written instructions for installation of EIFS as applicable to each type of substrate indicated.

1. Install base coat in 2 applications, with a minimum total thickness at least 1/16 inch, and completely covering reinforcing mesh so reinforcing-mesh color and pattern are not visible.

2. Apply finish coat over dry base coat, in thickness required by EIFS manufacturer to produce a uniform color and texture, free of variations.

B. Install prefabricated panels by welding metal framing to structural-steel frame or to steel-weld plates anchored in concrete, unless otherwise indicated.

1. Install panels level, plumb, and true to line with no variation in plane or alignment exceeding 1/16 inch and no variation in position exceeding 1/8 inch.

2. Maintain clearance between panels required for installing joint sealants.

C. Prepare joints and apply sealants to comply with applicable requirements of Division 7 Section "Joint Sealants" and with EIMA's "EIMA Guide for Use of Sealants with Exterior Insulation and Finish Systems Class PB."

PART 3 - END OF SECTION 07241

SECTION 07 25 00 – WEATHER BARRIERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

"Weather barrier assembly" has been used throughout the document. A weather barrier is a weather-resistant membrane for vertical building envelope protection that will maintain air/moisture resistance while maintaining moisture-vapor permeability. The assembly consists of the following four components.

A. Weather barrier membrane: DuPont™ Tyvek® CommercialWrap®
B. Seam Tape: DuPont™ Tyvek® Tape
C. Flashing: DuPont™ FlexWrap™,DuPont™ StraightFlash™ and/or DuPont™ StraightFlash™ VF
D. Fasteners: DuPont™ Tyvek® Wrap Caps

Equal or better alternates may be approved to all materials noted above. See below for submittal requirements.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer current technical literature for each component.
B. Samples: Weather Barrier Membrane, minimum 8-1/2 inches by 11 inch.
C. Quality Assurance Submittals
    1. Design Data, Test Reports: Provide manufacturer test reports indicating product compliance with indicated requirements.
    2. Manufacturer Instructions: Provide manufacturer's written installation instructions.
    3. Manufacturer's Field Service Reports: Provide site reports from authorized field service representative, indicating observation of weather barrier assembly installation.
D. Closeout Submittals
    1. Refer to Appropriate Section 01 70 00
    2. Weather Barrier Warranty: Manufacturer's executed warranty form with authorized signatures and endorsements indicating date of Substantial Completion.

1.4 QUALITY ASSURANCE

A. Qualifications
    1. Installer shall have experience with installation of commercial weather barrier assemblies under similar conditions.
    2. Installation shall be in accordance with weather barrier manufacturer's installation guidelines and recommendations.
    3. Source Limitations: Provide commercial weather barrier and accessory materials produced by single manufacturer.
B. Mock-up
    1. Install mock-up using approved weather barrier assembly including fasteners, flashing, tape and related accessories per manufacturer's current printed instructions

and recommendations.

a. Mock-up size: may be included in overall wall mock up as required by other sections if approved by manufacturer and does not compromise warranty.
b. Mock-up Substrate: Match wall assembly construction, including window opening.
c. Mock-up may [not] remain as part of the work.

2. Contact manufacturer's designated representative prior to weather barrier assembly installation, to perform required mock-up visual inspection and analysis as required for warranty.

C. Pre-installation Meeting

1. Hold a pre-installation conference, two weeks prior to start of weather barrier installation. Attendees shall include Contractor, Architect, Engineer, Installer, Owner's Representative, and Weather Barrier Manufacturer's Designated Representative.
2. Review all related project requirements and submittals, status of substrate work and preparation, areas of potential conflict and interface, availability of weather barrier assembly materials and components, installer's training requirements, equipment, facilities and scaffolding, and coordinate methods, procedures and sequencing requirements for full and proper installation, integration and protection.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver weather barrier materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
B. Store weather barrier materials as recommended by weather barrier manufacturer.

1.6 SCHEDULING

A. Review requirements for sequencing of installation of weather barrier assembly with installation of windows, doors, louvers and flashings to provide a weather-tight barrier assembly.
B. Schedule installation of weather barrier materials and exterior cladding within nine months of weather barrier assembly installation.

1.7 WARRANTY

A. Special Warranty

1. Special weather-barrier manufacturer's warranty for weather barrier assembly for a period of ten (10) years from date of final weather barrier installation.
2. Approval by weather barrier manufacturer for warranty is required prior to assembly installation.
3. Warranty Areas: all roof and wall areas addressed by the products listed above.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Tyvek Commericial Wrap; DuPont Building Innovations
B. Hardiwrap Weather Barrier; James Hardie Building Systems
C. Equivalent products of other manufacturers will be considered in accordance with

substitution provisions specified in Section 0160 00 – PRODUCT REQUIREMENTS.

2.2 MATERIALS

A. Basis of Design: High-performance, spunbonded polyolefin, non-woven, non-perforated, weather barrier is based upon DuPont™ Tyvek® CommercialWrap® and related assembly components.

B. Performance Characteristics:

1. Air Penetration: 0.001 cfm/ft^2 at 75 Pa, when tested in accordance with ASTM E2178. Type I per ASTM E1677.
2. Water Vapor Transmission: 28 perms, when tested in accordance with ASTM E96, Method B.
3. Water Penetration Resistance: 280 cm when tested in accordance with AATCC Test Method 127.
4. Basis Weight: 2.7 oz/yd^2, when tested in accordance with TAPPI Test Method T-410.
5. Air Resistance: Air infiltration at >1500 seconds, when tested in accordance with TAPPI Test Method T-460.
6. Tensile Strength: 38/35 lbs/in., when tested in accordance with ASTM D882, Method A.
7. Tear Resistance: 12/10 lbs., when tested in accordance with ASTM D1117.
8. Surface Burning Characteristics: Class A, when tested in accordance with ASTM E 84. Flame Spread: 10, Smoke Developed: 10.

2.3 ACCESSORIES

A. Seam Tape: 3 inch wide, DuPont™ Tyvek® Tape for commercial applications.

B. Fasteners:

1. DuPont™ Tyvek® Wrap Cap Screws, as manufactured by DuPont Building Innovations: 1-5/8 inch rust resistant screw with 2-inch diameter plastic cap or manufacturer approved 1-1/4" or 2" metal gasketed washer

AND/OR

2. Masonry tap-con fasteners with Tyvek® Wrap Caps as manufactured by DuPont Building Innovations: 2-inch diameter plastic cap fasteners.

C. Sealants

1. Refer to Division 07 00 00 Sections.

OR

2. Provide sealants that comply with ASTM C920, elastomeric polymer sealant to maintain watertight conditions.
3. Compatible Products:
   a. Tremco 830
   b. Tremco Butyl
   c. Sealants recommended by the weather barrier manufacturer.

D. Adhesives:

1. Provide adhesive recommended by weather barrier manufacturer.

2. Recommended Products, verify with adjacent and contacted conditions:
   a. Liquid Nails® LN-109
   b. Polyglaze® SM 5700
   c. Denso Butyl Liquid
   d. 3M High Strength 90
   f. Adhesives recommend by the weather barrier manufacturer.

E. Primers:
1. Provide flashing manufacturer recommended primer to assist in adhesion between substrate and flashing.
2. Recommended Products, verify with adjacent and contacted conditions:
   a. 3M High Strength 90
   b. Denso Butyl Spray
   c. Permagrip 105
   d. ITW TACC Sta' Put SPH
   e. Primers recommended by the flashing manufacturer

F. Flashing
1. DuPont™ FlexWrap™, as manufactured by DuPont Building Innovations: flexible membrane flashing materials for window openings and penetrations.

AND/OR

2. DuPont™ StraightFlash™ VF, as manufactured by DuPont Building Innovations: dual-sided straight flashing membrane materials for brick mold and non-flanged windows and doors.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify substrate and surface conditions are in accordance with weather barrier manufacturer recommended tolerances prior to installation of weather barrier and accessories.

3.2 INSTALLATION – WEATHER BARRIER

A. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer recommendations.
B. Install weather barrier prior to installation of windows and doors.
C. Start weather barrier installation at a building corner, leaving 6-12 inches of weather barrier extended beyond corner to overlap.
D. Install weather barrier in a horizontal manner starting at the lower portion of the wall surface with subsequent layers installed in a shingling manner to overlap lower layers. Maintain weather barrier plumb and level.
E. Sill Plate Interface: Extend lower edge of weather barrier over sill plate interface 3-6 inches. Secure to foundation with elastomeric sealant as recommended by weather barrier manufacturer.
F. Window and Door Openings: Extend weather barrier completely over openings.

G. Overlap weather barrier
   1. Exterior corners: minimum 12 inches.
   2. Seams: minimum 6 inches.

H. Weather Barrier Attachment:
   1. Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturer recommended fasteners, space 12 -18 inches vertically on center along stud line, and 24 inch on center, maximum horizontally.

   AND/OR

   2. Attach weather barrier to masonry. Secure using weather barrier manufacturer recommended fasteners, spaced 12-18 inches vertically on center and 24 inches maximum horizontally. Weather barrier may be temporarily attached to masonry using recommended adhesive, placed in vertical strips spaced 24 inches on center, when coordinated on the project site.

I. Apply 4 inch by 7 inch piece of DuPont™ StraightFlash™ to weather barrier membrane prior to the installation cladding anchors.

3.3 SEAMING

A. Seal seams of weather barrier with seam tape at all vertical and horizontal overlapping seams.

B. Seal any tears or cuts as recommended by weather barrier manufacturer.

3.4 OPENING PREPARATION (for use with non-flanged windows – all cladding types)

A. Flush cut weather barrier at edge of sheathing around full perimeter of opening.

B. Cut a head flap at 45-degree angle in the weather barrier at window head to expose 8 inches of sheathing. Temporarily secure weather barrier flap away from sheathing with tape.

3.5 FLASHING (for use with non-flanged windows – all cladding types)

A. Cut 9-inch wide DuPont™ FlexWrap™ a minimum of 12 inches longer than width of sill rough opening. Apply primer as required by manufacturer.

B. Cover horizontal sill by aligning DuPont™ FlexWrap™ edge with inside edge of sill. Adhere to rough opening across sill and up jambs a minimum of 6 inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.

C. Fan DuPont™ FlexWrap™ at bottom corners onto face of wall. Firmly press in place. Mechanically fasten fanned edges.

D. Apply 9-inch wide strips of DuPont™ StraightFlash™ at jambs. Align flashing with interior edge of jamb framing. Start DuPont™ StraightFlash™ at head of opening and lap sill flashing down to the sill.

E. Spray-apply primer to top 6 inches of jambs and exposed sheathing.

F. Install DuPont™ FlexWrap™ at opening head using same installation procedures used at sill. Overlap jamb flashing a minimum of 2 inches.

G. Coordinate flashing with window installation.

H. On exterior, install backer-rod in joint between window frame and flashed rough framing. Apply sealant at jambs and head, leaving sill unsealed. Apply sealants in accordance

with sealant manufacturer's instructions and ASTM C 1193.

I. Position weather barrier head flap across head flashing. Adhere using 4-inch wide DuPont™ StraightFlash™ over the 45-degree seams.

J. Tape top of window in accordance with manufacturer recommendations.

K. On interior, install backer rod in joint between frame of window and flashed rough framing. Apply sealant around entire window to create air seal. Apply sealant in accordance with sealant manufacturer's instructions and ASTM C 1193.

3.8 FIELD QUALITY CONTROL

A. Notify manufacturer's designated representative to obtain [required] periodic observations of weather barrier assembly installation.

3.9 PROTECTION

A. Protect installed weather barrier from damage.

END OF SECTION 07 25 00

SECTION 07 41 13 - METAL ROOF PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes the following:

1. Factory-formed metal roof panels, fasciae, and trim.

1.2 SUBMITTALS

A. Product Data: Include manufacturer's product specifications, standard details, certified product test results, and general recommendations for each type of metal roof panel and accessory indicated.

B. Qualification Data: For firms or persons specified in the Quality Assurance section of this specification.

C. Shop Drawings: Show fabrication and installation layouts of metal roof panels; details of edge conditions, joints, panel profiles, corners, archorages, trim, flashings, closures, accessories and special details and should be specific to this project. Distinguish between factory and field assembled work.

D. Color Samples: Manufacturer's sample of specified roofing material and finish.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer, trained and approved by the manufacturer, who has completed metal roof panel projects similar in material, design, and extent to that indicated for this project and with a record of successful in-service performance.

B. Manufacturer Qualifications: Demonstrate experience in the manufacturing of metal roof systems and shall have successfully manufactured the specified system for a minimum of five (5) years.

C. Pre-Install Conference: Conduct pre-installation conference at project site to review methods and procedures related to metal roof assemblies.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver panels and other components so they will not be damaged or deformed. Package panels for protection against damage during transportation or handling.

B. Handling: Exercise care in unloading, storing, and erecting, roof panels to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weather tight and ventilated covering. Store panels to ensure dryness. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.

1.5 WARRANTY

A. Provide manufacturer's standard written warranty, without monetary limitation, signed by manufacturer agreeing to promptly repair or replace metal roof panels that fail to remain weather tight or retain finish within 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 METAL ROOF PANELS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified.

1. Metal-Tech USA
2. Fabral: Thin Seam
3. MBCI: Lok-Seam
4. Peterson Aluminum Corporation (Pac-Clad): Snap Clad
5. Atas International, Inc.: PC Snap On
6. Equivalent products of other manufacturers will be considered in accordance with provisions specified in Section 01600 – PRODUCT REQUIRMENTS.

B. Wind-Uplift Resistance of Roof Assemblies: UL 580, Class 90.

C. Energy Performance of Roof Panels: Initial solar reflectance not less than 0.70 and emissivity not less than 0.75 when tested according to CRRC-1.

D. Roof Panel Type: concealed-fastener, standing seam, snap lock type metal roof panels. Vertical legs to be 1-1/2" to 2" high, spaced 16" to 18" center to center.

E. Metallic-Coated Steel Roof Panels: Aluminum-zinc alloy-coated steel sheet (Galvalume). ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40

1. Nominal Metal Thickness: 0.028 inch (0.71 mm)
2. Finish: Manufacturer's standard acrylic coat.

2.2 ACCESSORIES

A. Provide components required for a complete roof panel assembly including trim, fasciae, clips, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.

B. Flashing and Trim: Formed from 0.025-inch (0.64-mm) nominal thickness, aluminum-zinc alloy-coated steel sheet. Provide flashing and trim as required to seal against weather

and to provide finished appearance. Finish flashing and trim with same finish system as adjacent metal roof panels.

C. Self-Adhering Sheet Underlayment, High Temperature: ASTM D 1970 sheet barrier of self-adhering rubberized asphalt membrane shingle underlayment having internal reinforcement, and "split" back plastic release film; Use in 'low-slope' areas (below 4:12, but no less than 2:12); provide material with warranty equal in duration to that of shingles being applied.

1. Provide single-source roofing underlayment compatible with combined roofing materials as shown on drawings.

2. Manufacturer: Polyglass Polystick TU-Plus; Polyglass USA Inc. or approved equal

D. Slip Sheet: Manufacturer's recommended slip sheet, of type required for application.

E. Thermal Spacer Blocks: Fabricated from extruded polystyrene, 1 inch (25 mm) thick.

F. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil (0.4-mm) dry film thickness per coat.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Apply self-adhering sheet underlayment at eaves and rakes from edges of roof to at least 24 inches (600 mm) inside exterior wall line.

B. Apply self-adhering sheet underlayment at valleys extending 18 inches (450 mm) on each side.

C. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment.

D. Apply slip sheet over underlayment before installing metal roof panels.

E. Install flashings to cover underlayment to comply with requirements specified in Division 7 Section "Sheet Metal Flashing and Trim."

F. Rigidly fasten metal roof panels to structure at one and only one location for each panel. Allow remainder of panel to move freely for thermal expansion and contraction. Predrill panels for fasteners.

1. Steel Roof Panels: Use stainless-steel fasteners for surfaces exposed to the exterior and galvanized-steel fasteners for surfaces exposed to the interior.
2. Provide metal closures at rake edges rake walls and each side of ridge caps.
3. Flash and seal metal roof panels with weather closures at eaves, rakes, and perimeter of all openings.
4. Install ridge caps as metal roof panel work proceeds.

G. Install gaskets, joint fillers, and sealants where required for weatherproof performance of metal roof panel assemblies. Provide types of gaskets, fillers, and sealants recommended by metal roof panel manufacturer.

H. Separate dissimilar metals with a bituminous coating or self-adhering sheet underlayment.

I. Coat back side of aluminum panels with bituminous coating where they will contact wood, ferrous metal, or cementitious construction.

END OF SECTION 07413

SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Metal Flashing.

1.2 SECTION REQUIREMENTS

A. Submittals: Product Data and Samples.

B. Performance Requirements: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing.

C. Installer Qualifications: Engage an experienced installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this project and with a record of successful in-service performance.

D. Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

E. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

PART 2 - PRODUCTS

2.1 SHEET METAL

A. Aluminum-zinc alloy-coated steel sheet (Galvalume): ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40

B. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, with No. 2D finish; not less than 0.016 inch thick.

2.2 ACCESSORIES

A. Felt Underlayment: ASTM D 226, Type II (No. 30) asphalt-saturated organic felts.

B. Self-Adhering Sheet Underlayment, High Temperature: Butyl or SBS-modified asphalt; slip-resisting-polyethylene surfaced; with release paper backing; cold applied. Stable after testing at 240 deg F (116 deg C) and passes after testing at minus 20 deg F (29 deg C); ASTM D 1970.

C. Slip Sheet: Building paper, 3-lb/100 sq. ft. minimum, rosin sized.

D. Fasteners: Wood screws, annular-threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners.

1. Exposed Fasteners: Heads matching color of sheet metal roofing using plastic caps or factory-applied coating.
2. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
3. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
4. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

E. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.

F. Solder for Zinc-Tin Alloy-Coated Stainless Steel: ASTM B 32, 100 percent tin.

G. Butyl Sealant: ASTM C 1311, solvent-release butyl rubber sealant.

H. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.3 FABRICATION

A. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.

B. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with SMACNA's "Architectural Sheet Metal Manual." Allow for thermal expansion; set true to line and level. Install Work with laps, joints, and seams permanently watertight and weatherproof; conceal fasteners where possible.

1. Roof-Edge Flashings: Secure metal flashings at roof edges according to FMG Loss Prevention Data Sheet 1-49 for specified wind zone

B. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.

C. Fabricate nonmoving seams in sheet metal with flat-lock seams. For aluminum, form seams and seal with epoxy seam sealer. Rivet joints for additional strength.

D. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches (38 mm), except where pretinned surface would show in finished Work.

1. Do not pretin zinc-tin alloy-coated stainless steel.
2. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

E. Aluminum Flashing and Trim: Coat back side of aluminum flashing and trim with bituminous coating where it will contact wood, ferrous metal, or cementitious construction.

F. Separate dissimilar metals with a bituminous coating or polymer-modified, bituminous sheet underlayment.

END OF SECTION 07 62 00

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and color Samples.

B. Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS

A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions.

B. Visible joint sealants used, will be of a coordinating color to the material it's being applied to.

C. Sealant for Use in Building Expansion Joints:

1. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 50 for Use NT.

D. Sealant for General Exterior Use Where Another Type Is Not Specified:

1. Single-component, nonsag polysulfide sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.
2. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.
3. Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; and for Use NT.

E. Sealant for Exterior Traffic-Bearing Joints, Where Slope Precludes Use of Pourable Sealant:

1. Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use T.

F. Sealant for Exterior Traffic-Bearing Joints, Where Slope Allows Use of Pourable Sealant:

1. Single-component, pourable urethane sealant, ASTM C 920, Type S; Grade P; Class 25; for Use T.

G. Sealant for Use in Interior Joints in Ceramic Tile and Other Hard Surfaces in Kitchens and Toilet Rooms and Around Plumbing Fixtures:

1. Single-component, mildew-resistant silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT; formulated with fungicide.

H. Sealant for Interior Use at Perimeters of Door and Window Frames:

1. Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

I. Acoustical Sealant:

1. Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission as demonstrated by testing according to ASTM E 90.

2.2 MISCELLANEOUS MATERIALS

A. Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

D. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with ASTM C 1193.

B. Install sealant backings to support sealants during application and to produce cross-sectional shapes and depths of installed sealants that allow optimum sealant movement capability.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal perimeters, control joints, openings, and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions. Comply with ASTM C 919.

END OF SECTION 07 92 00

SECTION 08 11 00 - METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Shop Drawings.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cold-Rolled Steel Sheets: ASTM A 1008/A 1008M, suitable for exposed applications.

B. Hot-Rolled Steel Sheets: N/A.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, G60 (Z180) or A60 (ZF180).

D. Frame Anchors: ASTM A 591/A 591M, 40Z (12G) coating designation; mill phosphatized.

1. For anchors built into exterior walls, sheet steel complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

2.2 HOLLOW METAL DOORS AND FRAMES

A. Products:
1. Mesker Door Inc.
2. Republic Builders Products
3. Steel Craft

B. Fire-Rated Doors and Frames: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, based on testing according to NFPA 252.

1. Where indicated provide doors that that have a temperature rise rating of 450 deg F (250 deg C).

C. Smoke-Control Door Assemblies: Comply with NFPA 105 or UL 1784.

D. Doors: Complying with ANSI 250.8 for level and model and ANSI A250.4 for physical-endurance level indicated, 1-3/4 inches (44 mm) thick unless otherwise indicated.

1. Interior Doors: Level 2 and Physical Performance Level B (Heavy Duty), Model 2 (Seamless); 18 gauge.
2. Exterior Doors: Level 3 and Physical Performance Level A (Extra Heavy Duty), Model 2 (Seamless), metallic-coated steel sheet faces; 16 gauge.

a. Thermal-Rated (Insulated) Doors: Where indicated, provide doors with thermal-resistance value (R-value) of not less than 6.0 deg F x h x sq. ft./Btu (1.057 K x sq. m/W) when tested according to ASTM C 1363.

3. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as door face sheets.

E. Frames: ANSI A250.8; conceal fastenings unless otherwise indicated.

1. Steel Sheet Thickness for Interior Doors: 0.053 inch (1.3 mm); 16 gauge.
2. Steel Sheet Thickness for Exterior Doors: 0.053 inch (1.3 mm); 16 gauge.
3. Fabricate interior frames with mitered or coped and continuously welded corners.
4. Fabricate exterior frames from metallic-coated steel sheet, with mitered or coped and continuously welded corners.
5. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.
6. Frame Anchors: Not less than 0.042 inch (1.0 mm) thick.

F. Glazing Stops: Nonremovable stops on outside of exterior doors and on secure side of interior doors; screw-applied, removable, glazing stops on inside, fabricated from same material as door face sheet in which they are installed.

G. Door Louvers: Light proof per SDI 111C.

1. Fire-Rated Automatic Louvers: Actuated by fusible links and listed and labeled.

H. Door Silencers: Three on strike jambs of single-door frames and two on heads of double-door frames.

I. Grout Guards: Provide where mortar might obstruct hardware operation.

J. Prepare doors and frames to receive mortised and concealed hardware according to ANSI A250.6 and ANSI A115 Series standards.

K. Reinforce doors and frames to receive surface-applied hardware.

L. Prime Finish: Manufacturer's standard, factory-applied coat of lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install hollow metal frames to comply with ANSI/SDI A250.11.

1. Fire-Rated Frames: Install according to NFPA 80.

B. Install doors to provide clearances between doors and frames as indicated in ANSI/SDI A250.11.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying rust-inhibitive primer.

END OF SECTION 08 11 00

SECTION 08 14 16 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Samples for stained and painted doors.

PART 2 - PRODUCTS

2.1 DOOR CONSTRUCTION, GENERAL

A. Quality Standard: WDMA I.S.1-A.

B. Fire-Rated Wood Doors: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing at positive pressure according to NFPA 252.

1. Where indicated, provide doors that have a temperature rise rating of 450 deg F (250 deg C).

C. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain urea formaldehyde.

D. WDMA I.S.1-A Performance Grade:

1. Heavy Duty unless otherwise indicated.
2. Extra Heavy Duty: Classrooms, Public toilets, Janitor's closets, Assembly spaces, Exits.
3. Standard Duty: Closets (not including janitor's closets), Private toilets.

E. Fire-Protection-Rated Doors: Provide core specified or mineral core as needed to provide fire-protection rating indicated. Provide the following for mineral-core doors:

1. Composite blocking where required to eliminate through-bolting hardware.
2. Laminated-edge construction.
3. Formed-steel edges and astragals for pairs of doors.

2.2 FLUSH WOOD DOORS

A. Doors for Transparent Finish:

1. Interior Solid-Core Doors: Custom grade, five-ply, structural composite lumber cores.

a. Faces: Grade A rotary-cut select white birch.
b. Veneer Matching: Book and balance

c. Continuous matching for doors with transoms.

2.3 LOUVERS AND LIGHT FRAMES

A. Louvers: Factory-painted steel louvers

B. Light Frames: Factory-painted steel frames.

1. At fire-rated doors provide factory-painted steel frames approved for use in doors of fire-protection rating indicated.

2.4 FABRICATION AND FINISHING

A. Factory fit doors to suit frame-opening sizes indicated and to comply with clearances specified.

B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3.

C. Cut and trim openings to comply with referenced standards.

1. Trim light openings with moldings indicated.
2. Factory install glazing in doors indicated to be factory finished.
3. Factory install louvers in prepared openings.

D. Factory finish doors indicated for transparent finish with stain and manufacturer's standard finish complying with WDMA TR-6, catalyzed polyurethane for grade specified for doors.

1. Sheen: Semigloss.

E. Factory finish doors indicated for opaque finish with manufacturer's standard finish complying with OP-6, catalyzed polyurethane for grade specified for doors.

1. Sheen: Semigloss.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install doors to comply with manufacturer's written instructions and WDMA I.S.1-A, and as indicated.

1. Install fire-rated doors to comply with NFPA 80.

B. Align and fit doors in frames with uniform clearances and bevels. Machine doors for hardware. Seal cut surfaces after fitting and machining.

C. Clearances: As follows unless otherwise indicated:

1. 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors.
2. 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering.
3. 1/4 inch (6.4 mm) from bottom of door to top of threshold.
4. Comply with NFPA 80 for fire-rated doors.

D. Repair, refinish, or replace factory-finished doors damaged during installation, as directed by Architect.

END OF SECTION 08 14 16

SECTION 08 33 23 – OVERHEAD COILING DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Manually operated overhead coiling doors, operators, controls and accessories.

1.2 PERFORMANCE REQUIREMENTS

A. Structural Performance:

1. Wind Loads: Uniform pressure of resistance to meet code requirements in this region.

1.3 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit manufacturer's product data and installation instructions.

C. Shop Drawings: Provide drawings indicating guide details, head and jamb conditions, clearances, anchorage, accessories, finish colors, patterns and textures, operator mounts and other related information.

D. Quality Assurance Submittals: Submit the following:
1. Certificates: Submit manufacturer's certificate that products meet or exceed specified requirements.
2. Certificates: Submit installer qualifications.

E. Closeout Submittals: Submit the following:
1. Warranty documents available at www.raynor.com or from your authorized Raynor Dealer.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity, and trained and authorized by the door dealer to perform the work of this section.

B. Preinstallation Meetings: General Contractor required to schedule. Verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

1.5 DELIVERY, STORAGE, & HANDLING

A. General: Comply with Division 1 Product Requirements.

B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

1.6 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

1.7 MAINTENANCE

A. Extra Materials: Provide additional material for use by owner in building maintenance. Package products with protective covering and identify with descriptive labels. Comply with Division 1 Closeout Submittals (Maintenance Materials) Section. Service and repair should be performed by an authorized Raynor dealer.

1. Quantity: 4 (four).

B. Maintenance Service: Submit for Owner's consideration and acceptance maintenance service agreement for products installed.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Manufacturer: Raynor Door
1. Contact: P.O. Box 448, 1101 East River Road, Dixon, IL 61021-0448; Telephone: (800) 472-9667, (815) 288-1431; Fax: (815) 288-7142; E-mail: thegarage@raynor.com; website: www.raynor.com.

B. Manufacturer Product Designation: DURACOIL STANDARD

C. Alternate, equal manufacturers will be considered.

2.2 DOOR OPERATORS

A. Provide doors designed for hand chain operation.
1. Drive Orientation: For hand-chain, hand-crank or electric motor operated doors, orient the drive from the right-hand side when facing the reference side of the door (side with counterbalance or hood exposed).

2.3 CURTAIN

A. Material: Interlocking steel slats, 20 gauge (0.036 inch minimum thickness), roll-formed from commercial quality hot-dipped galvanized (G-90) steel in compliance with ASTM A-653.
1. Slat Type: Flat Slat.
a. Back Covers: Galvanized steel, 22 gauge (0.030 inch) minimum thickness.

B. Mounting: Face Mounting: fasten to face of wall on each side of door opening.

C. Color and Finish: One finish coat of ArmorBrite™ Powdercoat, color to be determined, applied over one coat of white epoxy primer.

D. Endlocks: Lateral movement of the slats to be contained by means of zinc-plated malleable endlocks fastened with two zinc-plated steel rivets.

E. Bottom Bar and Seal: Two roll-formed galvanized steel angles, minimum 1-1/2 inches by 1-1/2 inches by 1/8 inch (38.1 mm x 38.1 mm x 3.2 mm) with single-contact type bottom astragal. Structural angle bottom bar to receive one coat of rust-inhibitive primer.

2.4 GUIDES

A. Guide Assemblies: To consist of three structural steel angles, minimum 3 inches by 2 inches by 3/16 inch (76 mm by 51 mm by 4.8 mm) and fitted with removable curtain stops. Steel guides to be provided with one coat of rust-inhibitive primer.

B. Jamb Construction: Steel Jambs with self-tapping fasteners.

C. Weather Seal: Snap-on vinyl seal.

2.5 COUNTERBALANCE SYSTEM

A. Headplates: 3/16 inch (4.8 mm) steel plate, attached to wall angle of guide assembly with 1/2 inch (12.7 mm) diameter class 5 case hardened bolts. Inside of drive bracket fitted with sealed ball bearing. Provide head plates with one coat of rust-inhibitive primer

B. Barrel: Minimum 4-1/2 inches (114.3 mm) O.D. and 0.120 inch (3.1 mm) wall thickness structural steel pipe. Deflection of pipe under full load shall not exceed 0.03 inch (0.8 mm) per foot of span.

C. Counterbalance: Provide torsion counterbalance mechanism as follows: Torsion Spring: Oil-tempered, helical torsion springs, grease packed and mounted on a continuous steel torsion shaft.

2.6 ENCLOSURES

A. Hood: Square Hood: 24 gauge steel, finish-painted to match curtain.

B. Hood Baffle: With EPDM rubber seal to inhibit air infiltration through hood cavity.

2.7 HARDWARE

A. A. Locks: Furnish door system with: Cylinder Lock available for use with manual, hand chain, and hand crank operated doors.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

A. Comply with instructions and recommendations of door manufacturer.

3.2 ACCEPTABLE INSTALLERS

A. A & A Door Company – Forest Park, GA – 404.361.8360

B. Doors Unlimited, Inc. – Atlanta, GA – 404.875.8701

C. CML Doors Inc. – Conyers, GA – 770.922.5207

3.3 EXAMINATION

A. Site Verification of Conditions: Verify through direct observation and field measurement that site conditions are acceptable for installation of doors, operators, controls and accessories. Ensure that openings square, flush and plumb.

B. Do not proceed with installation of doors, operators, controls and accessories until unacceptable conditions are corrected.

3.4 INSTALLATION

A. General: Install door, guide and operating equipment complete with all necessary accessories and hardware according to shop drawings, manufacturer's instructions.

B. Site Tolerances: Manufacturer's highest quality.

C. Related Products Installation: Refer to Related Sections paragraph for related products installation.

3.5 FIELD QUALITY CONTROL

A. Manufacturer's Field Services: At Owner's request, provide manufacturer's field service consisting of product installation and use recommendations, and periodic site visits to observe and ensure product installation is done in accordance with manufacturer's recommendations.

3.6 ADJUSTING

A. General: Lubricate bearings and sliding parts and adjust doors for proper operation, balance, clearance and similar requirements.

3.7 CLEANING

A. Remove temporary coverings and protection of adjacent work areas. Repair or replace installed products damaged prior to or during installation.

B. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove and legally dispose of construction debris from project site.

END OF SECTION 08 23 33

SECTION 08 54 13 – FIBERGLASS WINDOW

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. All Ultrex® Glider window complete with hardware, glazing, weather strip, insect half screen, grilles-between-the-glass, jamb extension, sheet rock return, j-channel and standard or specified anchors, trim and attachments

1.2 System Description

A. Design and Performance Requirements:

Product	Air Tested to PSF	Water Tested to psf	Design Pressure (DP)	Certification Rating	Max Overall Width		Max Overall Height	
					in	mm	in	mm
Integrity All Ultrex Glider	1.57	6	40	LC-PG40-HS	53 1/2	1359	59 1/2	1511
Integrity All Ultrex Glider	1.57	6	40	LC-PG40-HS	71 1/2	1816	29 1/2	749
Integrity All Ultrex Glider	1.57	6	40	LC-PG40-HS	71 1/2	1816	41 1/2	1054
Integrity All Ultrex Glider	1.57	4.6	30	LC-PG30-HS	71 1/2	1816	59 1/2	1511
Integrity All Ultrex Glider Triple Sash	1.57	3.76	25	LC-PG25-HS	95 1/2	2426	29 1/2	749
Integrity All Ultrex Glider Triple Sash	1.57	3.76	25	LC-PG25-HS	95 1/2	2426	59 1/2	1511
Integrity All Ultrex Sliding Fixed Window	1.57	7.5	50	LC-PG50-FW	59 1/2	1511	71 1/2	1816

1.3 Submittals

A. Shop Drawings: Submit shop drawings under provision of Section 01 30 00.

B. Product Data: Submit catalog data under provision of Section 01 30 00.

C. Samples:

1. Submit corner section under provision of section 01 30 00.

2. Specified performance and design requirements under provisions of Section 01 30 00.

D. Quality Control Submittals: Certificates: submit manufacturer's certification indicating compliance with specified performance and design requirement under provision of section 01 30 00.

1.4 Quality Assurance

A. Requirements: consult local code for IBC [International Building Code] and IRC [International Residential Code] adoption year and pertinent revisions for information on:

3. Egress, emergency escape and rescue requirements

4. Basement window requirements

5. Windows fall prevention and/or window opening control device requirements.

1.5 Delivery

A. Comply with provisions of Section 01 60 00

B. Deliver in original packaging and protect from weather.

1.6 Storage and Handling

A. Store window units in an upright position in a clean and dry storage area above ground to protect from weather under provision of Section 01 60 00.

1.7 Warranty

The following limited warranty is subject to conditions and exclusions. There are certain conditions or applications over which Integrity has no control. Defect or problems as a result of such conditions or applications are not the responsibility of Integrity. For a more complete description of the Integrity limited warranty, refer to the Complete and current warranty information is available at Integritywindows.com/warranty.

A. Clear insulating glass with stainless steel spacers is warranted against seal failure caused by manufacturing defects and resulting in visible obstruction through the glass for twenty (20) years from the original date of purchase. Glass is warranted against stress cracks caused by manufacturing defects from ten (10) years from the original date of purchase.

B. Hardware another non-glass components are warranted to be free from manufacturing defects for ten (10) years from the original date of purchase.

PART 2 - PRODUCTS

2.1 Manufactured Units

A. Description: All Ultrex® Glider (and related Triple Sash Glider) as manufactured by Integrity Windows and Doors, Roanoke, Virginia.

2.2 Frame Description

A. Interior:

1. Pultruded reinforced fiberglass (Ultrex®)

2. 0.070 (2mm) inch thick

B. Total frame depth: 3 3/32 (79mm) inches

1. Standard jamb depth: 2 (51mm) inches

2.3 Sash Description

A. Pultruded reinforced fiberglass (Ultrex®)

1. 0.070 (2mm) inch thick

B. Composite sash thickness:

1. 15/16 (24mm) inch

2.4 Glazing

A. Select quality complying with ASTM C 1036. Insulating glass SIGMA/IGCC when tested in accordance with ASTM E 2190. STC/OITC ratings are tested to the stated performance level in accordance with ASTM E 90-09.

B. Glazing Method: 11/16 (17mm) inch

C. Glass Type: Low E1, E2, E3, or E3/ERS air or Argon gas

D. Glass Type Options: Obscure Glass or California Fire Glass (Annealed exterior and tempered interior glazing configuration)

E. Glazing Seal: Silicone bead at exterior and vinyl glazing seal to interior

F. Glazing Option: STC/OITC upgrade.

2.5 Mulling

2.5.1 Standard Mulling

A. Directional mull limits: 3 wide by 1 unit high; Rough Opening not to exceed 114 x 60 (2896mm x 1524mm)

B. Directional mull limits: 2 wide by 2 units high; Rough Opening not to exceed 72 x 78 (1829mm x 1981mm)

2.5.2 Reinforced Mulling

C. Directional mull limits: 3 wide by 1 unit high; Rough Opening not to exceed 114 x 60 (2896mm x 1524mm)

D. Directional mull limits: 2 wide by 2 units high; Rough Opening not to exceed 72 x 78 (1829mm x 1981mm)

2.6 Finish

A. Exterior: Ultrex® (Polutruded fiberglass)

1. Factory baked on acrylic urethane

2. Meets AAMA 624-10 requirements

B. Interior: Ultrex® (Pultruded fiberglass)

1. Factory baked on acrylic urethane

2. Meets AAMA 624-10 and 00022716 requirements

C. Color: Bronze exterior with Stone White interior.

2.7 Hardware

A. Sash lock: High pressure zinc die-cast cam lock and keeper

1. Finish: Phosphate coated and electronically painted
2. Color: white
3. Two locks on units taller than 30 (762mm) inches

B. Sash pull: Zinc die cast contoured sash lifts

1. Color: white

C. Tilt latches: Ergonomic tilt latch attached to sash to help with removal of window for cleaning

D. Sash stop kit: Available as a field applied option to limit sash travel

1. ABS material
2. Color: White
3. Head jamb is pre-drilled to ensure proper placement

E. Vent stops: Available as a factory option

1. Injected molded nylon
2. Color: White
3. Vent stops limit the sash operation when activated and allow normal operation when deactivated

F. Factory-applied Window Opening Control Device for operating units per ASTM F2090-10: A system consisting of an acetal lever housed in an acetal shell on lower meeting stile of the operating sash and a stop on the lower rail of the stationary sash.

1. Available on all sizes
2. Color: White

2.8 Weather Strip

A. Color: Beige

B. Sill weather strip is foam filled vinyl bulb

1. Rigid HDPE bumps surround bulb for easy operation and tear resistance

C. Frame weather strip is a combination hollow vinyl bulb and flexible wand

D. Stationary meeting stile interlock has a rigid ABS with flexible alcryn seals

2.9 Jamb Extension

A. Standard 2" (51mm)jambs

1. Optional factory-installed jamb extension: 4 9/16 (116m) inch and 6 9/16 (167mm) inch

2.10 Insect Half Screen

A. Factory-installed half screen

1. Screen mesh 18 x 16

2. Charcoal fiberglass

B. Rolled form aluminum frame finish

1. Colors: Stone White; Pebble Grey; Bronze; Evergreen; Cashmere; and Ebony

2.11 Grilles-Between-the–Glass (GBG)

A. 11/16 (18mm) inch contoured aluminum bar

B. Color: Stone white interior, exterior color determined by frame color

C. Patterns:

1. Rectangular

2.12 Accessories and Trim

A. Installation Accessories:

1. Factory-installed vinyl nailing fin/drip cap at head, sill and side jambs

2. Installation brackets for masonry applications

3. Mullion kit: standard mullion kit for filed assembly of related units available in horizontal, vertical and 2-wide and/or 2-high configurations. Kit includes: Instruction, interior and exterior mull covers, mull plugs and brackets

4. Sheet rock return

5. J-channel

6. Flush Fin

B. Exterior Casing:

7. Non-integral to the unit. Fastened to the exterior wall with barb and ker

8. 2 (51mm) inch Brick Mould available as a full surround or with sill nosing

9. 3 ½" (89mm) Flat Casing available as a full surround or with sill nosing. Also available with 1" (25mm) Ranch Style header and sill overhang.

10. Colors: Stone White, Evergreen, Bronze, Pebble Gray, Cashmere, Ebony.

PART 3 - EXECUTION

3.1 Examination

A. Verification of Condition: Before installation, verify openings are plumb, square and of proper dimensions as required in Section 01 70 00. Report frame defects or unsuitable conditions to the General Contractor before proceeding,

B. Acceptance of Condition: Beginning installation confirms acceptance of existing conditions.

3.2 Installation

A. Comply with Section 01 70 00.

B. Assemble and install window/door unit(s) according to manufacturer's instruction and reviewed shop drawing.

C. Install sealant and related backing materials at perimeter of unit or assembly in accordance with Section 07 92 00 Joint Sealants. Do not use expansive foam sealant.

D. Install accessory items as required.

E. Use finish nails to apply wood trim and mouldings.

3.3 Cleaning

A. Remove visible labels and adhesive residue according to manufacturer's instruction.

B. Leave windows and glass in a clean condition. Final cleaning as required in Section 01 70 00.

3.4 Protecting Installed Construction

A. Protecting windows from damage by chemicals, solvents, paint or other construction operations that may cause damage.

END OF SECTION 08 54 13

SECTION 08 71 00 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Finished hardware and incidentals for swinging doors and weatherstripping, seals, and door gaskets.

B. Hardware Sets: Hardware sets described in the Hardware Schedule in this Section are as shown in the door schedule drawings.

C. Any door shown in the drawings not specifically referenced to in the hardware schedule shall be provided with identical hardware sets on similar openings and shall be included in the finish hardware suppliers bid. Notify the Architect in writing if any discrepancies exist in the door schedule and/or hardware schedule prior to the bid date.

1.2 SUBMITTALS

A. Product Data: Submit manufacturers technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finishes, and other information necessary to show compliance with the requirements of this section

B. Door Hardware Schedule: Prepared by or under the supervision of the supplier. 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 Hardware sets in the same order as in the hardware sets schedule at the end of this section. Submittals that do not follow this order will be rejected and subject to resubmission.

3. Content: Include for each item of finished hardware the following information

a) Door Number and door location by room number
b) Type, style, function, size and finish of each hardware item
c) Manufacturer and model number of each item
d) Fastenings and other pertinent information
e) Location of each hardware set cross referenced to, is indicated in drawings on both floor plans and in door schedule.
f) Explanation of all abbreviations, symbols, and codes contained in schedule.
g) Mounting location for hardware
h) Door and frames sizes and materials

C. Submittal sequence: Submit the final Door Hardware Schedule at the earliest possible date, particularly where approval of the hardware schedule must precede fabrication

of other work that is critical in the Project construction schedule. Include all pertinent information essential to the coordinated review of the Door Hardware Schedule.

D. Maintenance Data: Include specific manufacturer's literature, exploded parts views, etc., for each type of door hardware to include in the operations and maintenance manuals as specified in Section 01 70 00.

E. Warranties: Special warranties specified in this section.

F. Fire-Resistance-Rated Assemblies: Provide products that comply with NFPA 80 and are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for applications indicated. On exit devices provide label indicating "Fire Exit Hardware."

1.3 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain each type of hardware (latch and lock sets, hinges, closers, etc.) from a single source manufacturer.

B. Supplier Qualifications: Door hardware supplier with warehousing facilities in Project's vicinity who is or employs a qualified Architectural Hardware Consultant, available during the course of the Work to consult with Contractor, Architect and Owner about door hardware and keying.

C. Keying Conference: Supplier to meet with owner or owner's representative to finalize keying requirements and to obtain final instructions in writing previous to any hardware order or purchase.

D. Regulatory Requirements: All Hardware to meet the requirements of the following regulatory codes:

1. 2012 International Building Code
2. 2012 NFPA 101
3. ANSI 117.1 Americans with Disabilities Act (ADA)
4. 1997 Georgians with Disabilities Act

E. Fire Rated Door Assemblies: Provide door hardware for 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.

F. Templates: Provide templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Provide adequate provisions for locating and installing door hardware to comply with indicated requirements.

G. Provide wood blocking at locations in walls where door stops are mounted.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Tag each item or package separately with identification related to the groupings in the final Door Hardware Schedule. Include basic installation instructions with each item.

B. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.

PART 2 - PRODUCTS

2.1 HINGES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Stanley
2. McKinney
3. Hager

B. Comply with BHMA A156.1

C. Provide all doors with five-knuckle 4 ½" x 4 ½" ball bearing heavy weight, full mortise hinges according to conditions as outlined below.

D. Quantity: Provide the following per door leaf, unless otherwise indicated:

1. Three Hinges: For Doors with heights of 61 to 90 inches
2. Four Hinges: For Doors with heights of 91 to 120 inches

E. Hinge Base Material: Unless otherwise indicated, provide the following:

1. Exterior Hinges: Stainless Steel, with stainless steel pin
2. Interior Hinges: Brass or Bronze
3. Hinges for Fire-Rated Assemblies: Steel with steel pin

F. Hinge Pins: Unless otherwise indicated , provide the following:

1. Out-Swing Exterior Doors: Nonremovable pins
2. Interior doors: Non rising pins
3. Tips: Flat button and matching plug, finished to match leaves

2.2 LOCKS AND LATCHSETS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Schlage; ND Series
2. Sargent Manufacturing Company; 10 Line
3. Corbin Russwin Hardware; CL3300

B. FINAL Heavy Duty Cylindrical Locks and Latches complying with BHMA A156.2, Grade 1

C. Lever Style: Similar to Schlage "Sparta" style

D. Provide trim on exit devices matching locksets

2.3 KEYING REQUIREMENTS

A. Comply with BHMA 156.28

B. Provide 6-pin cylinders and removable cores

C. Provide cylinders for overhead doors and other locking doors that do not require other hardware

D. Provide construction keying until final product is installed.

E. Keying Conference: Supplier to meet with owner or owner's representative to finalize keying requirements and to obtain final instructions in writing.

2.4 EXIT DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Von Duprin: 98 Series
2. Sargent Manufacturing Company: 30 Series
3. Precision Hardware, Inc.: Apex Series
4. Corbin Russwin Hardware: ED5000 Series

B. Comply with BHMA A156.3 requirements for Grade 1

C. Removable Mullions: Keyed

D. All exit devices and mullions shall be product of one manufacturer.

E. Outside Trim: Pull with cylinder, material and finish to match locksets, unless otherwise indicated

2.5 CLOSERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. LCN: 4040 Series
2. Sargent Manufacturing Company: 351 Series
3. Corbin Russwin Hardware: DC6000 Series
4. Norton Door Controls: 7500 Series

B. Comply with BHMA A156.4 requirements for Grade 1

C. Provide type of arm required for closer to be located on interior (room side) of door opening and parallel to the door head.

D. Refer to hardware schedule for doors to include hold-open feature.

E. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

2.6 PUSH PULL UNITS

A. Manufacturers: Subject to compliance with requirements and Architects approval, provide products by one of the following:

1. Hager Hinge Co.
2. H.B. Ives
3. Baldwin Hardware Corp.
4. Rockwood Manufacturing

B. Comply with BHMA A156.6

C. Provide manufacturer's special concealed fastener system for installation, through bolted for matched pairs but not for single units.

D. Size: ADA Compliant, 1" round with 10" centers. Straight style.

2.7 STOPS AND SILENCERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Hager Hinge Co.
2. H.B. Ives
3. Trimco
4. Rockwood Manufacturing

B. Comply with BHMA A156.16

C. Generally provide a door stop for each door leaf as follows, unless otherwise specified:

1. Doors indicated on plans to strike a wall, provide convex type wall stops
2. Where wall stops are not practical, provide floor stops
3. Where wall stops cannot be used, and where floor stops present a tripping hazard, use overhead stops.

D. Provide silencers at all door frames except those specified to have weatherstripping, sound seals, or smoke seals. Furnish 3 per single frame and 2 per pair. Self-adhesive type silencers (stick-on) are not acceptable.

E. Provide wood blocking at locations in walls where door stops are mounted.

2.8 PROTECTION PLATES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Hager Hinge Co.
2. H.B. Ives
3. McKinney Products
4. Rockwood Manufacturing

B. Size: Furnish protection plates on both sides of door as sized below:

1. Kick Plates: 2" less door width and 8" high
2. Mop Plates: 2" less door width and 4" high

C. Material: .050 inches thick, beveled four sides with countersunk screw holes.

2.9 HARDWARE FINISHES

A. Comply with BHMA A156.21 &A156.22

B. Manufacturers - subject to compliance with requirements, provide products by one of the following:

1. Hager Hinge Co.
2. National Guard Products, Inc.
3. Reese Industries
4. Zero Weather-Stripping Co., Inc.

C. Door bottoms shall be of aluminum of the finish indicated and shall provide proper clearance and an effective seal with specified thresholds.

D. Door bottom shall have a rubber, vinyl, or neoprene seal as indicated.

E. The door bottom shall exclude light when door is in the closed position and shall inhibit the flow of air through the unit.

F. Thresholds shall be heavy-gauge aluminum of the finish indicated, and shall provide an effective seal with the door bottom.

G. Where required, thresholds shall be prepared to accommodate floor closers, pivots, and projecting bolts of latching hardware.

H. Thresholds at floor closers shall have mitered returns and removable access portion for floor closer maintenance.

I. Metal housed type weather strip shall be aluminum of the finish indicated, comprised of metal retainers with vinyl, neoprene, silicone rubber, or polyurethane inserts.

J. Seals shall remain functional through all weather and temperature conditions.

K. Gaskets shall be a compressions type product for use with any type door; labeled for use on fire-rated doors where required.

L. Types: Indicated in hardware set headings.

2.10 HARDWARE FINISHES

A. Comply with BHMA 156.18

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable temporary protective covering before shipping.

C. Provide the following finishes

1.	Hinges:	US15
2.	Locksets and trim:	US15
3.	Exit Devices:	US15
4.	Closers:	US15
5.	Push Pull Units:	US15
6.	Stops and Silencers:	US15 and Grey Rubber
7.	Protection Plates:	US15

PART 3 - EXECUTION

3.1 INSTALLATION

A. Mount hardware in locations recommended by the Door and Hardware Institute unless otherwise indicated.

B. Install each door hardware item to comply with manufacturer's 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.

C. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

D. Provide and coordinate concealed wood blocking for wall mount stops as detailed in the Hardware Schedule.

E. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant.

F. Weatherstripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

G. Clean adjacent surfaces soiled by hardware installation

H. Instruct owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes.

3.2 HARDWARE SCHEDULE

A. The following door hardware represents the intent of hardware to be installed at each door opening. This schedule should be considered as a guide only, and should not be considered a detailed hardware schedule. Conflicting items or missing items should be brought to the attention of the architect with corrections made prior to the bidding process.

Hardware Set #1 Double Exterior Storefront Door

1 Exit Device (Night Latch & Pull)
1 Closer
1 Weatherstripping and threshold
** Reference Section 08 41 13 for all other door accessories associated with Storefront Systems not listed above.
** Door Security systems to be determined by owner

Hardware Set #2 Double Exterior Doors - Exit

3 Hinges
1 Exit Device (Night Latch & Pull)
1 Closer
2 Kick Plates
1 Weatherstripping and threshold

Hardware Set #3 Single Exterior Doors - Exit

3 Hinges
1 Exit Device (Night Latch & Pull)
1 Closer
2 Kick Plates
1 Weatherstripping and threshold

Hardware Set #4 Double Interior Storefront Door

1 Exit Device (Night Latch & Pull)
1 Closer
1 Weatherstripping and threshold
** Reference Section 08 41 13 for all other door accessories associated with Storefront Systems not listed above.
** Door Security systems to be determined by owner

Hardware Set #5 Single Interior Doors - Exit

3 Hinges
1 Exit Device (Dummy Trim & Pull)
1 Closer
1 Wall Stop
2 Kick Plates
3 Door Silencers

Hardware Set #6 Single Interior Doors – Office

3 Hinges
1 Lockset (Office)
2 Kick Plates
1 Wall Stop
3 Door Silencers

Hardware Set #7 Single Interior Doors – Storage

3 Hinges
1 Lockset (Storage)
2 Kick Plates
1 Wall Stop
3 Door Silencers

Hardware Set #8 Single Interior Doors - Privacy

3 Hinges
1 Lockset (Privacy)
2 Kick Plates
1 Wall Stop
3 Door Silencers
1 Closer

Hardware Set #9 Single Interior Doors – Push / Pull

3 Hinges
2 Push/pull Handle sets
2 Kick Plates
1 Wall Stop
3 Door Silencers
1 Closer

END OF SECTION 08 71 00

SECTION 08 80 00 - GLAZING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and 12-inch- (300-mm-) square Samples.

B. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201.

C. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated.

1. GANA Publications: GANA's "Glazing Manual."
2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR-A7, "Sloped Glazing Guidelines."
3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

D. Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

E. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

PART 2 - PRODUCTS

2.1 Manufacturer

A. Oldcastle Building Envelope

B. Equivalent products of other manufacturers will be considered.

2.2 GLASS PRODUCTS

A. Float Glass: ASTM C 1036, Type I, Quality-Q3.

B. Heat-Treated Float Glass: ASTM C 1048; Type I; Quality-Q3.

C. Reflective-Coated Glass: ASTM C 1376, coated by pyrolytic process.

D. Tempered Glass: ASTM C 1048, Kind FT (fully tempered), Type II, Class 1 (clear), Form 3; Quality-Q6.

E. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190.

2.3 MONOLITHIC-GLASS TYPES

A. Window Type C: Glass Type A: Tinted fully tempered float glass; located between Observation room and Firearms Simulation.

1. Thickness: 6.0 mm.
2. Tint Color: Bronze.
3. Solar Heat Gain Coefficient: N/A
4. Provide safety glazing labeling

2.4 INSULATING-GLASS TYPES

A. Window Type C: Glass Type B: Tinted insulating glass; located between Observation room and Cell Extraction.

1. Overall Unit Thickness: 1 inch (25 mm).
2. Thickness of Each Glass Lite: 1/4" (6.0 mm)
3. Outdoor Lite: Tinted fully tempered float glass.
4. Tint Color: Bronze.
5. Interspace Content: Argon.
6. Indoor Lite: Clear fully tempered float glass.
7. Provide safety glazing labeling.

B. Glass Type C: Tinted insulating glass; Exterior Storefront systems.

1. Overall Unit Thickness: 1 inch (25 mm).
2. Thickness of Each Glass Lite: 1/4" (6.0 mm).
3. Outdoor Lite: Tinted, fully tempered float glass. Face 1 - clear and Face 2 - PPG Solargray
4. Interspace Content: Argon.
5. Indoor Lite: Fully tempered float glass. Face 3 - PPG Solarban 60 and Face 4 - clear
6. Winter Nighttime U-Factor: 0.29 maximum.
7. Summer Daytime U-Factor: 0.27 maximum.
8. Solar Heat Gain Coefficient: 0.38 maximum.
9. Provide safety glazing labeling.

2.5 GLAZING SEALANTS

A. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT.

B. Glazing Sealants for Fire-Rated Glazing Products: Products that are approved by testing agencies that listed and labeled fire-resistant glazing products with which they are used for applications and fire-protection ratings indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are contained in GANA's "Glazing Manual."

B. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

C. Remove nonpermanent labels, and clean surfaces immediately after installation.

END OF SECTION 08 80 00

SECTION 09 29 00 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

B. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency.

2.2 METAL FRAMING AND SUPPORTS

A. Suspended and Furred Ceilings: Comply with ASTM C 645 and ASTM C 754.
   1. Wire Ties: ASTM A 641 (ASTM A 641M), Class 1 zinc coating, soft temper, 0.062 inch (1.6 mm) thick.
   2. Hangers: Wire, ASTM A 641 (ASTM A 641M), Class 1 zinc coating, soft temper, 0.162-inch (4.2-mm) diameter.
   3. Carrying Channels: Cold-rolled steel, 2 inches (50.8 mm).
   4. Furring Channels: Steel studs or channels, 0.0179-inch- (0.45-mm-) thick in depth indicated.
   5. Hot-dip galvanized coating complying with ASTM A 653, G40 (ASTM A 653M, Z90) for framing exterior soffits and suspended ceilings within 10 feet (3 m) of exterior walls.
   6. Direct-hung grid suspension system for interior ceilings.

B. Partitions: Comply with ASTM C 645.
   1. Studs and Runners: In depth indicated and 0.0179-inch (0.45-mm) thick, unless otherwise indicated.
   2. Rigid Hat-Shaped Furring Channels: In depth indicated and 0.0179-inch (0.45-mm) thick, unless otherwise indicated.
   3. Furring Brackets: Adjustable serrated-arm type fabricated from corrosion-resistant steel sheet 0.0329-inch (0.84-mm) thick.
   4. Resilient Furring Channels: 1¼-inch deep, with single- or double-leg.
   5. Z-Furring: Z-shaped members with face flange of 1-1/4 inch (31.8 mm), wall attachment flange of 7/8 inch (22.2 mm), and in depth required by insulation.
   6. Hot-dip galvanized coating complying with ASTM A 653, G40 (ASTM A 653M, Z90) for framing members attached to and within 10 feet (3 m) of exterior walls.

2.3 PANEL PRODUCTS

A. Provide in maximum lengths available to minimize end-to-end butt joints.

B. Interior Gypsum Board: ASTM C 36/C 36M or ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges. Regular type unless otherwise indicated, Sag – resistant type for ceiling surfaces.

C. Interior Gypsum Board: ASTM C 36/C 36M or ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges. Type X where indicated.

D. Water-Resistant Gypsum Backing Board: ASTM C 630/C 630M or ASTM C 1396/C 1396M, in thickness indicated. Regular type unless otherwise indicated

E. Glass-Mat, Water-Resistant Gypsum Backing Board: ASTM C 1178/C 1178M, of thickness indicated.

1. Product: G-P Gypsum; Dens-Shield Tile Guard.

F. Cementitious Backer Units: ANSI A118.9.

2.4 ACCESSORIES

A. Trim Accessories: ASTM C 1047, formed from paper-faced galvanized-steel sheet. For exterior trim, use accessories formed from hot-dip galvanized-steel sheet.

1. Provide cornerbead at outside corners unless otherwise indicated.
2. Provide LC-bead (J-bead) at exposed panel edges.
3. Provide control joints where indicated and as required by manufacturer's recommendations. Architect to approve visible locations.

B. Aluminum Accessories: Extruded-aluminum accessories indicated with manufacturer's standard corrosion-resistant primer

C. Joint-Treatment Materials: ASTM C 475/C 475M.

1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.
2. Joint Compounds: Drying-type, ready-mixed, all-purpose compounds
3. Skim Coat: For final coat of Level 5 finish, use high-build interior coating product designed for application by airless sprayer and to be used instead of skim coat to produce Level 5 finish
4. Cementitious Backer Unit Joint-Treatment Materials: Products recommended by cementitious backer unit manufacturer.

D. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834.

E. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced).

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install gypsum board to comply with ASTM C 840.

1. Isolate gypsum board assemblies from abutting structural and masonry work. Provide edge trim and acoustical sealant.
2. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws.
3. Multilayer Fastening Methods: Fasten base layers and face layer separately to supports with screws

B. Install cementitious backer units to comply with ANSI A108.11.

C. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.

D. Finishing Gypsum Board: ASTM C 840.

1. At concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies, provide Level 1 finish: Embed tape at joints.
2. At substrates for tile, provide Level 2 finish: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges.
3. Unless otherwise indicated, provide Level 4 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges.
4. Where existing wall coverings are kept or removed, provide Level 5 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges. Apply skim coat to entire surface.

E. Glass-Mat, Water-Resistant Backing Panels: Finish according to manufacturer's written instructions.

F. Cementitious Backer Units: Finish according to manufacturer's written instructions.

END OF SECTION 09 29 00

SECTION 09 51 23 - ACOUSTICAL TILE CEILINGS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and material Samples.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

B. Seismic Standard: Provide acoustical tile ceilings designed and installed to withstand the effects of earthquake motions according to the following:

1. CISCA's Recommendations for Acoustical Ceilings: Comply with CISCA's "Recommendations for Direct-Hung Acoustical Tile and Lay-in Panel Ceilings - Seismic Zones 0-2."
2. UBC Standard 25-2, "Metal Suspension Systems for Acoustical Tile and for Lay-in Panel Ceilings."

2.2 ACOUSTICAL TILE

A. Available Products:

1. Basis of Design: Armstrong Ultima

2. Equivalent products of other manufacturers will be considered in accordance with substitution provisions specified in Section 01 60 00 – PRODUCT REQUIREMENTS.

B. Classification: As follows, per ASTM E 1264:

1. Type and Form: Type IV, Form 2
2. Pattern: E (lightly textured)
3. Color: White
4. Light Reflectance (LR) Coefficient: 0.90
5. Noise Reduction Coefficient (NRC): 0.70
6. Ceiling Attenuation Class (CAC): Not less than 35

C. Surface-Burning Characteristics: ASTM E 1264, Class A materials, tested per ASTM E 84.

D. Edge Detail: Beveled Tegular

E. Thickness: 3/4 inch (19 mm)

F. Modular Size: 24 by 24 inches

2.3 SUSPENSION SYSTEM

A. Ceiling Suspension System: Direct hung ASTM C 635, heavy-duty structural classification.

1. Available Products:

a. Basis of Design: Armstrong "Prelude XL Fire Guard 15/16" Exposed Tee or Prelude Plus XL Fire Guard 15/16" Exposed Tee

b. Equivalent products of other manufacturers will be considered in accordance with substitution provisions specified in Section 01 60 00 – PRODUCT REQUIREMENTS.

B. Attachment Devices: Size for 5 times the design load indicated in ASTM C 635, Table 1, Direct Hung, unless otherwise indicated. Comply with seismic design requirements.

C. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.

1. Size: Provide yield strength at least 3 times the hanger design load (ASTM C 635, Table 1, Direct Hung), but not less than 0.135-inch- (3.5-mm-) diameter wire.

D. Access: Identify upward access tile with manufacturer's standard unobtrusive markers for each access unit.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Ceiling Suspension System Installation: Comply with ASTM C 636, UBC Standard 25-2 and CISCA's "Ceiling Systems Handbook."

B. Install acoustical tiles in coordination with suspension system and exposed moldings and trim. Place splines or suspension system flanges into kerfed edges so tile-to-tile joints are closed by double lap of material.

1. Fit adjoining tile to form flush, tight joints. Scribe and cut tile for accurate fit at borders and around penetrations through tile.

END OF SECTION 09 51 23

SECTION 09 65 13 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
1. Resilient Wall Base
2. Resilient Vinyl Stair Tread and Nosing.

1.2 SECTION REQUIREMENTS

A. Submittals: Product Data and Samples for each type of product indicated.

B. Extra Materials: Deliver to Owner at least 10 linear feet of each type and color of resilient wall base installed.

PART 2 - PRODUCTS

2.1 RESILIENT WALL BASE

A. Manufacturer
1. Johnsonite, Inc.

2. Equivalent products of other manufacturers will be considered.

B. Products:

1. See finish schedule

C. Color and Profile: See finish schedule

D. ASTM F 1861, Type TP (rubber, thermoplastic)

E. Height: 5.5 inches

F. Finish: As selected.

2.2 RESILIENT RUBBER STAIR TREAD WITH INTEGRATED RISER

A. Manufacturer
1. Johnsonite, Inc

2. Equivalent products of other manufacturers will be considered.

B. Resilient Rubber Stair Tread:

1. Rubber Integrated Stair Tread and Riser with the following physical characteristics:
   a. Manufactured from a homogeneous composition of 100% synthetic rubber.
   b. Complies with requirements for ASTM F 2169 Standard Specification for Resilient Stair Treads, Type TS, Class 1 and 2, Group 1 and 2.
   c. Hardness: ASTM D 2240 – Not less than 85 Shore A.
   d. Abrasion Resistance: ASTM D 3389 – less than 1 gram weight loss.
   e. ASTM D 2047, Standard Test Method for Static Coefficient of Friction of Polish- Coated Flooring of 0.6 or greater.
   f. ASTM E 648, Standard Test Method for Critical Radiant Flux of 0.45 watts/cm^2 or greater, Class I.
   g. Integrated tread and riser.
   h. Visually Impaired treads meet ADA and are California Title 24 Accessibility requirements.
   i. Visually Impaired treads will have 2" wide co-extruded contrasting color insert or 2" wide contrasting color grit tape insert.

2. For Diamond surface, solid color integrated stair tread and riser, 2" height hinged Square Nose, tapering .210" to .113", 20" overall width including 13" tread depth with 7" integrated riser, tread length 4'
   a. Specify CNTR – XXX
   b. Specify color by number and name: Burnt Umber B – 63
   c. Specify length: 4'

2.3 INSTALLATION ACCESSORIES

A. Adhesives: Water-resistant type recommended by manufacturer to suit products and substrate conditions.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install in accordance with manufacturers recommendations and instructions

B. Prepare concrete substrates according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

C. Adhesively install resilient wall base and accessories.

D. Install wall base in maximum lengths possible. Apply to walls, columns, pilasters, casework, and other permanent fixtures in rooms or areas where base is required.

END OF SECTION 09 65 13

SECTION 09 65 19 – RESILIENT TILE FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes
   1. Rubber floor tile.
   2. Vinyl composition floor tile
   3. BioBased floor tile
   4. Luxury Vinyl Tile (LVT)

1.2 SECTION REQUIREMENTS

A. Submittals:
   1. Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions for flooring and accessories.
   2. Submit the manufacturer's standard samples showing the required colors for flooring and applicable accessories.

B. Closeout Submittals:
   1. Maintenance Data: For each type of floor tile to include in maintenance manuals.

C. Extra Materials: Deliver to Owner 1 box for every 50 boxes or fraction thereof, of each type and color of resilient floor tile installed.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs workers for this Project who are competent in techniques required by manufacturer for floor tile installation and seaming method indicated (LVT Resilient).

   1. Engage an installer who employs workers for this Project who are trained for installation techniques required.

B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

   1. Build mockups for floor tile including resilient base, feature strips, and accessories.

      a. Size: Minimum 100 sq. ft. (9.3 sq. m) for each type, color, and pattern in locations directed by Architect.

   2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 68 deg F (20 deg C) or more than 72 deg F (22 deg C) for a minimum period of 24-48 hours or until individual temperatures are met. Store floor tiles on flat surfaces.

PART 2 - PRODUCTS

2.1 RUBBER FLOOR TILE

A. Manufacturer:

1. Rubber Floors & More

2. Equivalent products of other manufacturers will be considered.

B. Color and Pattern: Black with grey speck

C. Installation Pattern: Random.

D. Wearing Surface: Smooth.

E. Thickness: 3/8" (8mm)

F. Size: 24 by 24 inches (609.6 by 609.6 mm) interlocking tiles.

2.2 VINYL COMPOSITION FLOOR TILE

A. Manufacturer:

1. Armstrong World Industries, Inc., 2500 Columbia Avenue, Lancaster, PA 17603, http://www.armstrong.com/commflooringna/

2. Equivalent products of other manufacturers will be considered.

B. Color and Pattern: Excelon Stonetex, 52149 Cocoa Brown

C. Installation pattern: Basketweave

D. ASTM F 1066, Class 2 (through-pattern tile).

E. Wearing Surface: Smooth.

F. Thickness: 0.125 inch (3.2 mm).

G. Size: 12 by 12 inches (304.8 by 304.8 mm).

2.3 BIOBASED FLOOR TILE

A. Manufacturer:

1. Armstrong World Industries, Inc., 2500 Columbia Avenue, Lancaster, PA 17603, http://www.armstrong.com/commflooringna/

2. Equivalent products of other manufacturers will be considered.

B. Color and Pattern: Striations - Malted Milk

C. Installation pattern: See finish drawings.

D. Bio-flooring tile shall conform to the requirements of ASTM F 2982 Standard Specification for Polyester Composition Floor Tile. Note: STRIATIONS BBT™ and MIGRATIONS® bio-flooring's unique binder systems does not contain polyvinyl chloride resins and plasticizers.

E. Wearing Surface: Smooth.

F. Thickness: 0.125 inch (3.2 mm).

G. Size: 24 by 12 inches (304.8 by 304.8 mm).

2.4 LUXURY VINYL FLOOR TILE

A. Manufacturer:

1. TANDUS / CENTIVA

2. Equivalent products of other manufacturers will be considered.

B. Color and Pattern: Heritage Oak VP 3526-U / Style: Wood

C. Installation Pattern: See interior drawings.

D. ASTM F 1700, Class III Type B.

E. Wearing Surface: Smooth.

F. Thickness: 0.120 inch (3.0 mm).

G. Size: 6" x 48" plank

2.5 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement- or blended hydraulic cement-based formulation provided or approved by flooring manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

C. Metal Edge Strips: Extruded aluminum in maximum available lengths to minimize joints.

PART 3 - PRODUCTS

3.1 PREPARATION

A. Concrete Moisture Testing: Conduct moisture tests on all concrete floors regardless of the age, grade level or the presence of existing flooring. Conduct calcium chloride tests in accordance with ASTM F1869. Measure the internal relative humidity of the concrete slab in accordance with ASTM F2170. One test of each type should be conducted for every 1,000 sq. ft. of flooring. For projects less than 3,000 sq. ft., a minimum of three tests of each type should be conducted. The tests should be conducted around the perimeter of the room, at columns, and where moisture may be evident. Concrete moisture vapor emissions must not exceed 5.0 lbs. per 1,000 sq. ft. in 24 hrs. Concrete internal relative humidity must not exceed 75%. A diagram of the area showing the location and results of each test should be submitted to the Architect, General Contractor or End User. If any test result exceeds these limitations, the installation must not proceed until the problem has been corrected.

3.2 INSTALLATION

A. Prepare concrete substrates according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

B. Lay out tiles so tile widths at opposite edges of room are equal and are at least one-half of a tile.

C. Match tiles for color and pattern by selecting tiles from cartons in same sequence as manufactured and packaged. Lay tiles in patterns indicated.

END OF SECTION 09 65 19

SECTION 09 99 10 - PAINTING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals:

1. Product Data
2. Samples on 8x10 or larger sheets.

B. Mockups: Full-coat finish Sample of each type of coating, color, and substrate, applied where directed in a 4'x4' block. Architect to review once sample is dry.

C. Extra Materials: Deliver to Owner 1 gal. (3.8 L) of each color and type of finish coat paint used on Project, in containers, properly labeled and sealed.

PART 2 - PRODUCTS

2.1 PAINT

A. Available Products:

1. Sherwin Williams

B. MPI Standards: Provide materials that comply with MPI standards indicated and listed in its "MPI Approved Products List."

C. Material Compatibility: Provide materials that are compatible with one another and with substrates.

1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

D. Colors: See Finish Schedule

PART 3 - EXECUTION

3.1 PREPARATION

A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Remove hardware, lighting fixtures, and similar items that are not to be painted. Mask items that cannot be removed. Reinstall items in each area after painting is complete.

C. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting so cleaning operations will not damage newly painted surfaces.

3.2 APPLICATION

A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Paint exposed surfaces unless otherwise indicated.

1. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces.
2. Paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint the back side of access panels.
4. Color-code mechanical piping in accessible ceiling spaces.
5. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.

C. Apply paints according to manufacturer's written instructions.

1. Use brushes only for exterior painting and where the use of other applicators is not practical.
2. Use rollers for finish coat on interior walls and ceilings.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

1. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

E. Apply stains and transparent finishes to produce surface films without color irregularity, cloudiness, holidays, lap marks, brush marks, runs, ropiness, or other imperfections. Use multiple coats to produce a smooth surface film of even luster.

3.3 EXTERIOR PAINT APPLICATION SCHEDULE

A. Steel:
1. Semi gloss Alkyd Enamel: Two coats over rust-inhibitive primer: MPI EXT 5.1D.

B. Exterior Gypsum Soffit Board:

1. Flat Acrylic Latex: Two coats over primer.

C. Cement Board Siding:

1. Flat Acrylic Latex: Two coats over factory primer: MPI EXT 3.3A.

D. Plastic Trim:

1. Semi gloss Acrylic Latex: Two coats over (water-based) bonding primer: MPI EXT 6.8A.

3.4 INTERIOR PAINT APPLICATION SCHEDULE

A. Sealer for Concrete Slab:

1. Provide a solvent-borne, clear curing compound and a durable sealer for interior horizontal concrete floors: MPI INT 3.2F. See Section 03 36 00 – DYE STAINED COLORED GROUND AND POLISHED CONCRETE.

B. Steel:

1. Semi gloss Alkyd Enamel: Two coats over alkyd anticorrosive or quick-drying alkyd primer: MPI INT 5.1E.

C. Dressed Lumber: Including architectural woodwork and doors

1. Satin Latex: Two coats over primer: MPI INT 6.3T.

D. Wood Panel-Products:

1. Semi gloss Alkyd Varnish: Two coats over stain and alkyd sanding sealer: MPI INT 6.4D.

E. Gypsum Board:

1. CEILINGS: Flat Acrylic Latex: Two coats over primer/sealer: MPI INT 9.2A.
2. WALLS: Satin Acrylic Latex: Two coats over primer/sealer: MPI INT 9.2A.

END OF SECTION 09 99 10

SECTION 10 44 13 - FIRE EXTINGUISHER CABINETS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Fire-Rated, Fire-Protection Cabinets: Listed and labeled to comply with requirements in ASTM E 814 for fire-resistance rating of walls where they are installed.

PART 2 - PRODUCTS

2.1 FIRE-PROTECTION CABINETS

A. Fire-Protection Cabinets: Enameled-steel, semi-recessed (4" stud walls) for fire extinguisher.

1. Acceptable Products; subject to compliance with specified requirements

a. J.L. Industries, Inc., Cosmopolitan
b. Larsen Mfg. Co., Architectural Series

2. Equivalent products of other manufacturers will be considered in accordance with provisions specified in Section 01 60 00 – PRODUCT REQUIREMENTS.

B. Cabinet Construction: Nonrated

1. Fire-Rated Cabinets: Constructed with double walls fabricated from 0.048-inch-(1.21-mm-) thick, steel sheet lined with fire-barrier material.

C. Cabinet Material: No. 4 Stainless-steel sheet.

1. Trim Style: Flat trim
2. Trim Material: No. 4 Stainless steel

D. Door Material: No. 4 Stainless steel

1. Door Style: Fully glazed with frame
2. Door Glazing: Tempered float glass

E. Identification lettering: FIRE EXTINGUISHER decal or vinyl, self-adhering, prespaced lettering in size, color, and vertical or horizontal orientation as selected by Architect.

F. Hardware: Full length piano hinge, roller catch

G. Pull: Shall comply with ADA requirements. Provide manufacturer's standard pull handle.

H. Finishes:
1. Stainless Steel: No. 4

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install cabinets at 54 inches above finished floor to top of cabinet.

B. Fire-Rated Hose or Valve Cabinets: Install cabinet with not more than 1/16-inch (1.6-mm) tolerance between pipe OD and knockout OD. Seal through penetrations with firestopping sealant.

END OF SECTION 10 44 13

SECTION 10 44 16 - FIRE EXTINGUISHERS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 FIRE EXTINGUISHERS AND BRACKETS

A. Portable Fire Extinguishers: NFPA 10, listed and labeled for the type, rating, and classification of extinguisher.

1. Acceptable Manufacturers:

a. Larsens Manufacturing Company
b. J.L. Industries.
c. Potter-Roemer, Inc.

2. Equivalent products of other manufacturers will be considered in accordance with provisions specified in Section 01 60 00 – PRODUCT REQUIREMENTS.

3. Multipurpose Dry-Chemical Type: UL-rated 4-A: 60-B: C, 10-lb nominal capacity, in enameled-steel container.

B. Mounting Brackets: Manufacturer's standard steel, designed to secure fire extinguisher to wall or structure, of sizes required for fire extinguishers indicated, with plated or baked-enamel finish.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install fire extinguishers in mounting brackets and cabinets where indicated.

END OF SECTION 10 44 16

SECTION 313116 - TERMITE CONTROL

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and product certificates for each type of product indicated. Include the EPA-Registered Label.

B. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located[**, and who employs workers trained and approved by manufacturer to install manufacturer's products**] [**, and who is accredited by manufacturer**].

C. Regulatory Requirements: Formulate and apply termiticides and termiticide devices according to the EPA-Registered Label.

D. Continuing Service: Provide [**12 months'**] <**Insert number**> continuing service including monitoring, inspection, and re-treatment for occurrences of termite activity.

PART 2 - PRODUCTS

2.1 TERMITE CONTROL PRODUCTS

A. Soil Treatment Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in an aqueous solution.

1. Service Life of Treatment: Soil treatment termiticide that is effective for not less than [**three**] [**five**] <**Insert number**> years against infestation of subterranean termites.

B. Wood Treatment with Borate: Provide an EPA-registered borate temiticide complying with requirements of authorities having jurisdiction.

C. Bait Station System: Provide bait stations based on the dimensions of building perimeter indicated on Drawings, according to manufacturer's EPA-Registered Label for product, manufacturer's written instructions, and the following:

1. No fewer than one bait station per [**8 linear feet (2.4 linear meters)**] [**20 linear feet (6.1 linear meters)**] <**Insert value**>.
2. No fewer than one cluster of bait stations per 20 linear feet (6.1 linear meters), consisting of no fewer than three bait stations per cluster.

D. Metal Mesh Barrier System: Stainless-steel mesh, 0.025-by-0.018-inch (0.64-by-0.45-mm), made from 0.08-inch- (2.0-mm-) diameter, Type 316 stainless-steel wire.

E. Polymer Sheet Barrier System: 16-mil- (0.40-mm-) thick, multilayered, laminated, polymer sheet with lambda-cyhalothrin termiticide sealed between two outer polymer layers.

F. Polymer Barrier Fittings: Integral 2-1/2-inch- (65-mm-) long polymer sleeve and 1-inch- (25-mm-) wide circular flange with lambda-cyhalothrin termiticide sealed between two outer polymer layers; with fasteners.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

B. Soil Treatment Application: Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction:

1. At foundations.
2. Under concrete floor slabs-on-grade.
3. Under basement floor slabs.
4. At hollow masonry.
5. At expansion and control joints and slab penetrations.
6. At crawlspaces; treat soil under and adjacent to foundations. Treat adjacent areas including around entrance platform, porches, and equipment bases.

C. Post warning signs in areas of soil treatment application.

D. Reapply soil termiticide treatment solution to areas disturbed by subsequent excavation or other construction activities following application.

E. Wood Treatment Application: Provide quantity of borate solution required for application at the label volume and rate for the maximum specified concentration of borate, according to manufacturer's EPA-Registered Label, so that wood framing, sheathing, siding, and structural members subject to infestation receive treatment.

F. Installing Bait Station Systems: Place bait stations and, if applicable, monitoring stations, according to the EPA-Registered Label for the product and manufacturer's written instructions.

1. Inspect and service bait stations during time specified for continuing service, according to the EPA-Registered Label for product and manufacturer's written instructions.

G. Metal Mesh Barrier: Place metal mesh barrier where indicated to provide a continuous barrier to entry of subterranean termites. Install mesh under the perimeter of concrete slab edges and joints after vapor barrier and reinforcing steel are in place. Fit mesh tightly around pipe or other penetrations.

H. Install polymer sheet barrier system according to manufacturer's EPA-Registered Label to provide a complete and continuous barrier to entry of subterranean termites.

I. Install polymer barrier fittings around each utility pipe and conduit penetrating concrete [**slab**] [**foundation walls**] <**Insert requirement**> according to the EPA-Registered Label for the product and manufacturer's written instructions.

END OF SECTION 313116

SECTION 92 00 – TURF AND SOD

SECTION 02485

GRASSING

PART 1 – PRODUCTS

1.01 MATERIALS GENERAL

A. The Contractor shall, at the time of delivery, furnish the Engineer invoices of all materials, received in order that the application rate of materials may be determined.

1.02 FERTILIZER

A. 10-10-10, commercial fertilizer of accepted type, conforming to state fertilizer laws.

1.03 LIME

A. Lime shall be agricultural grade, ground limestone and shall conform to the requirements of the Georgia Department of Agriculture. Lime to be added based on soil tests.

1.04 SEED

A. All seed shall conform to all State Laws and to all requirements and regulations of the Georgia Department of Agriculture.

B. The several varieties of seed shall be individually packaged or bagged, and tagged to show name of seed, net weight, origin, germination, lot number, and other information required by the Department of Agriculture.

C. The Engineer reserves the right to test, reject, or accept all seed before seeding.

D. Mixtures of different types of seed called for in the seeding schedule shall be weighted and mixed in the proper proportions at the site of the work in the presence of the Engineer.

1.05 SEEDING SCHEDULE

A. Hulled Bermuda Seeds are to be used at a rate of 40 pounds per acre, and at a depth of 1/4 to 1/8 inch. Pure line seed to be 82% by weight, with a maximum weed seed of 0.50%.

B. In shaded areas, or other areas as directed by the Owner or Engineer, the Contractor shall use a mixture of hulled Bermuda seed at a rate of 25 pounds per acre and carpet seed at a rate of 30 pounds per acre.

C. Temporary grassing shall consist of annual rye grass seed at a rate of 75 pounds per acre.

D. In areas where existing grasses are to be matched, the Contractor shall sow the seed at the rate recommended by the seed distributor.

1.06 STRAW MULCH

A. Straw mulch material shall consist of straw or hay. Straw shall be stalks of wheat, rye, barley, oats, or other accepted straw. Hay shall consist of timothy, pea vine, alfalfa, coastal Bermuda or other grasses from accepted sources. These materials shall be reasonably dry and shall be reasonably free from mature seed-earing stalks, roots, or bulb lets or Johnson Grass, Nut grass, Sandbur, Wild Garlic, Wild Onion, Wild Mustard, Crotalaria, Pigweed, Witch weed and Cocklebur. The Contractor shall also comply with all State and Federal domestic plant quarantine regulations.

1.07 EXCELSIOR MULCH

A. Excelsior mulch shall consist of wood fibers cut from sound, green timber. The average length of the fibers shall be 4 to 6 inches. The cut shall be made in such a manner as to provide maximum strength of fiber, but at a slight angle to the natural grain of the wood so as to cause splintering of the fibers when weathering in order to provide adherence to each other and to the soil.

1.08 WOOD CELLULOSE FIBER MULCH

A. Wood cellulose fiber mulch shall be made from wood chips particles manufactured particularly for discharging uniformly on the ground surface when dispersed by a hydraulic water sprayer. It shall remain in uniform suspension in water under agitation and blend with grass seed and fertilizer to form a homogenous slurry. The mulch fibers shall intertwine physically to form a strong moisture holding mat on the ground surface and allow rainfall to percolate the underlying soil. The mulch shall be heat processed so as to contain no germination or growth inhibiting factors. It shall be dyed (non-toxic) an appropriate color to facilitate metering of material.

B. Suppliers shall be prepared to certify that laboratory and field testing of their project has been accomplished, and that it meets all of the foregoing requirements based upon such testing.

C. Weight specifications for this material from suppliers and for all applications shall refer only to air dry weight of fiber material. Absolute air dry weight is based on the normal weight standard of the Technical Association of the Pulp and Paper Industry for wood cellulose and is considered equivalent to 10% moisture. Each package of the cellulose fiber shall be marked by the manufacturer to show the air dry weight content.

1.09 SOD

A. Sod shall be densely rooted, good quality centipede grass, free from noxious weeds. The sod shall be obtained from areas where the soil is reasonably fertile. The sod shall be raked free of all debris and the grass mowed to two inches before cutting. The sod shall contain practically all of the dense root system and not be less than one (1) inch thick. Sod shall be cut in uniform strips not less than twelve (12) inches in width and not less than twentyfour (24) inches in length.

1.10 PRODUCT REVIEW

A. The Contractor shall provide the Engineer with a complete description of all products before ordering. The Engineer will review all products before they are ordered.

PART 2 – EXECUTION

2.01 STAND OF GRASS

A. Before acceptance of the seeding performed for the establishment of permanent vegetation, the Contractor will be required to produce a satisfactory stand of perennial grass whose root system shall be developed sufficiently to survive dry periods and the winter weather and be capable of re-establishment in the spring.

B. Before acceptance of the seeding performed for the establishment of temporary vegetation, the Contractor will be required to produce a stand of grass sufficient to control erosion for a given area and length of time before the next phase of construction or the establishment of permanent vegetation is to commence.

2.02 SEEDING DATES AND RATES OF APPLICATION

A. Seeding shall be performed during the periods and at the rates specified in the seeding schedules. Seeding work may, at the discretion of the Contractor, be performed throughout the year using the schedule prescribed for the given period. Seeding work shall not be conducted when the ground is frozen or

excessively wet. The Contractor will be required to produce a satisfactory stand of grass regardless of the period of the year the work is performed.

2.03 PREPARATION

A. The areas to be seeded or sodded shall be made smooth and uniform and shall conform to the finished grade and cross section shown on the plans or as otherwise designated. Minor shaping and smoothing of uneven and rough areas outside the graded section shall be performed as directed by the Engineer in order to provide for more effective erosion control and for ease of subsequent mowing operations.

B. The areas to be grassed, if not loose, shall be loosened to a minimum depth of 3 inches before agricultural lime, fertilizer, seed or sod is applied. The areas to be seeded shall be cleared of stones larger than 2-1/2-inches, in any dimension, roots, and other debris.

2.04 APPLYING LIME AND FERTILIZER

A. Following advance preparation and placing selected material for shoulders and slopes when called for in the contract, lime if called for based on soil tests and fertilizer shall be spread uniformly over the designated areas and shall be thoroughly mixed with the soil to a depth of approximately 2 inches. Fertilizer shall be applied at the rate of 500 pounds per acre for the initial application, unless otherwise directed by the Engineer. Lime shall be applied at the rate determined by the soil test. Unless otherwise provided, lime will not be applied for temporary seeding. In all cases where practicable, acceptable mechanical spreaders shall be used for spreading fertilizer. On steep slopes subject to slides and inaccessible to power equipment, the slopes shall be adequately scarified. Fertilizer may be applied on steep slopes by hydraulic methods as a mixture of fertilizer and seed. When fertilizer is applied in combination seed and fertilizer drills, no further incorporation will be necessary. The fertilizer and seed shall be applied together when the method of seeding (Wood Cellulose Fiber Mulch) is used. Any stones larger than 2-1/2 inches in any dimension, larger clods, roots, or other debris brought to the surface shall be removed.

2.05 SEEDING

A. Seed shall be sown within 24 hours following the application of fertilizer and lime and preparation of the seedbed as specified in Section 2.04. Seed shall be uniformly sown at the rate specified by the use of acceptable mechanical seed drills. Rotary hand seeders, power sprayers or other satisfactory equipment may be used on steep slopes or on other areas that are inaccessible to seed drills.

B. The seeds shall be covered and lightly compacted by means of a cultipacker or light roller if the drill does not perform this operation. On slopes inaccessible to

compaction equipment, the seed shall be covered by dragging spiked chains, by light harrowing or by other satisfactory methods.

C. Apply water with fine spray immediately after each area has been sown.

D. Do not sow seed when ground is too dry, during windy periods or immediately following a rain.

E. All seeded areas seeded with permanent grasses shall be uniformly mulched in a continuous blanket immediately following seeding and compacting operations, using at least 2 tons of straw per acre.

2.06 SEEDING (EXCELSIOR MULCH)

A. Seed shall be sown as specified in Section 2.05. Within 24 hours after the covering of seed, excelsior mulch shall be uniformly applied at the rate of 2 tons per acre. The mulch may be applied hydraulically or by other acceptable methods. Should the mulch be placed in a dry condition, it shall be thoroughly wetted immediately after placing. The Engineer may require light rolling of the mulch to form a tight mat.

2.07 SEEDING (WOOD CELLULOSE FIBER MULCH)

A. After the lime has been applied and ground prepared as specified in Section 2.04, wood cellulose fiber mulch shall be applied at the rate of 1,500 pounds per acre in a mixture of seed and fertilizer. Hydraulic equipment shall be used for the application of fertilizer, seed and slurry of the prepared wood pulp. This equipment shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry of the specified amount of fiber, fertilizer, seed and water. The slurry distribution lines shall be large enough to prevent stoppage. The discharge line shall be equipped with a set of hydraulic spray nozzles which will provide an even distribution of the slurry on the various areas to be seeded. The slurry tank shall have a minimum capacity of 1,000 gallons.

The seed, fertilizer, wood pulp mulch, and water shall all be combined into the slurry tank for distribution of all ingredients in one operation by the hydraulic seeding method specified herein. The materials shall be combined in a manner recommended by the manufacturer. The slurry mixture shall be so regulated that the amounts and rates of application shall result in a uniform application of all materials at rates not less than the amount specified. Using the color of the wood pulp as a guide, the equipment operator shall spray the prepared seedbed with a uniform visible coat. The slurry shall be applied in a sweeping motion, in an arched stream so as to fall like rain, allowing the wood fibers to build upon each other until an even coat is achieved.

2.08 SODDING

A. Sod shall be placed between March 1st and December 1st

B. Sod shall be placed within 48 hours of cutting.

C. Sod shall be moist when laid and placed on moist ground. The sod shall be carefully placed by hand, beginning at the toe of slopes and working upwards. The length of the strips shall be at right angles to the flow of surface water. All joints shall be tightly butted and end joints shall be staggered at least 12 inches. The sod shall be immediately pressed firmly into the ground by tamping or rolling. Fill all joints between strips with fine screened soil. Sod on slopes shall be pegged with sod pegs to prevent movement. The sod shall be watered, mowed, weeded, repaired or otherwise maintained, to insure the establishment of a uniform healthy stand of grass until acceptance.

2.09 MAINTENANCE:

A. Maintain seeded and sodded surfaces until final acceptance.

B. Maintenance shall consist of providing protection against traffic, watering to ensure uniform seed germination and to keep surface of soil damp, and repairing any areas damaged as a result of construction operations or erosion.

2.10 ACCEPTANCE:

A. Before release of the performance bond on the seeding and sodding performed for the establishment of permanent vegetation, the Contractor will be require developed sufficiently to survive dry periods and the winter weather and be capable of reestablishment in the spring.

N. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

O. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.

2.2 MIXES

A. Comply with ACI 301 requirements for concrete mixtures.

B. Normal-Weight Concrete: Prepare design mixes, proportioned according to ACI 301, as follows:

1. Minimum Compressive Strength: 3000 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.55.
3. Slump Limit: 5 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
4. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of floor slabs to receive troweled finishes to exceed 3 percent.

C. Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M.

1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 CONCRETING

A. Construct formwork according to ACI 301 and maintain tolerances and surface irregularities within ACI 347R limits of Class A, 1/8 inch for concrete exposed to view and Class C, 1/2 inch for other concrete surfaces.

B. Place vapor retarder on prepared subgrade, with joints lapped 6 inches and sealed.

C. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

D. Install construction, isolation, and contraction joints where indicated. Install full-depth joint-filler strips at isolation joints.

E. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.

F. Protect concrete from physical damage, premature drying, and reduced strength due to hot or cold weather during mixing, placing, and curing.

G. Formed Surface Finish: Smooth-formed finish for concrete exposed to view, coated, or covered by waterproofing or other direct-applied material; rough-formed finish elsewhere.

H. Slab Finishes: Comply with ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces. Provide the following finishes:

1. Scratch finish for surfaces to receive mortar setting beds.
2. Float finish for interior steps and ramps and surfaces to receive waterproofing, roofing, or other direct-applied material.
3. Troweled finish for floor surfaces and floors to receive floor coverings, paint, or other thin film-finish coatings.
4. Trowel and fine-broom finish for surfaces to receive thin-set tile.
5. Nonslip-broom finish to exterior concrete platforms, steps, and ramps.

I. Cure formed surfaces by moist curing for at least seven days.

J. Begin curing concrete slabs after finishing. Keep concrete continuously moist for at least seven days. Apply membrane-forming curing and sealing compound to concrete.

K. Owner will engage a testing agency to perform field tests and to submit test reports.

L. Protect concrete from damage. Repair surface defects in formed concrete and slabs.

END OF SECTION 03 30 00