PROJECT MANUAL FOR:

FAYETTE COUNTY TRAINING FACILITY REUSE RENOVATION

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

architecture
interiors
town planning

KAOD
K A Oldham Design, Inc

10.23.15 FOR BID
KAOD PROJECT # 1464.00
FAYETTE CO BID # 1034-B

TABLE OF CONTENTS

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

DIVISION 08 – OPENINGS

DIVISION 09 – FINISHES

DIVISION 10 – SPECIALTIES

DIVISION 22 – PLUMBING

DIVISION 23 – HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

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

October 23, 2015

Subject: Invitation for Bids #1034-B Training Facility Reuse Renovation

Gentlemen/Ladies:

Fayette County, Georgia is seeking bids from qualified contractors for a training facility reuse renovation project, in accordance with the information and specifications contained herein.

A **mandatory** pre-bid conference will be held at 10:00a.m., Friday, November 06, 2015 at Fayette County Links Golf Course, 340 Hewell Road in 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.

BID MUST BE SUBMITTED TO:
FAYETTE COUNTY PURCHASING DEPARTMENT
140 STONEWALL AVENUE WEST - SUITE 204
FAYETTEVILLE, GEORGIA 30214
BID #1034-B
REFERENCE: TRAINING FACILITY REUSE RENOVATION

BID #1034-B October 23, 2015

Bids will be received at the above address until 3:00 p.m., Tuesday, November 18, 2015 in the Purchasing Department, Suite 204. Bids will be opened at approximately 3:00 p.m. November 18, 2015. 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 the invitation for bids to a company or individual, we will keep a record of who we mailed that invitation for bids to and all addenda for that invitation for bids will also be mailed to those companies or individuals.

****

Bid results 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

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. **Bid is Offer to Contract**: Each bid constitutes an offer to become legally bound to a contract with the county, incorporating the invitation to bid and the bidder's bid. The binding offer includes compliance with all terms, conditions, special conditions, specifications, and requirements stated in the invitation to bid, except to the extent that a bidder takes written exception to such provisions. All such terms, conditions, special conditions, specifications, and requirements will form the basis of the contract. The bidder should take care to answer all questions and provide all requested information, and to note any exceptions in the bid submission. Failure to observe any of the instructions or conditions in this invitation to bid may result in rejection of the bid.

3. **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.

4. **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.

5. **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.

6. **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 can be found in the cover letter to the invitation to bid document or on the web site, and
    c. The "reference" which identifies the bid, which can be found in the cover letter or the web site.

    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.

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

8. **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.

9. **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.

10. **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.

11. **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.

12. **Prices Held Firm**: Prices quoted shall be firm for the period of the contract, unless otherwise specified in the bid. All prices for commodities, supplies, equipment, or other products shall be quoted FOB Destination, Fayette County or job site.

13. **Quantities are Estimates**: Quantities listed herein are estimates for the period specified. This will be an indefinite-quantity type contract, with county requirements fulfilled on an "as ordered" basis. No guarantee to purchase the amounts shown is intended or implied. The county reserves the right to order larger or smaller quantities at the prices stated in the bid of the successful bidder.

14. **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. The county reserves the right to determine equivalency.

15. **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.

16. **Samples**: When the county requires samples as part of the bid and vendor selection process, bidders must provide requested samples within the time allotted, and at no cost to the county unless otherwise specified. Any goods provided under contract shall conform to the sample submitted. The county will return samples only at the bidder's request, and at the bidder's expense, if they are not destroyed by testing.

17. **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.

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

19. **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.

20. **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.

21. **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).

22. **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.

23. **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.

24. **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.

25. **Insurance**: The successful bidder of 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**: $2,000,000 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 Insurance:** For 100% of the amount of the contract.

Before a contract with the successful bidder is executed, the successful bidder shall provide Certificates of Insurance for all required coverage. The successful offeror 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

26. **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).

27. **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).

28. **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.

29. **Assignment of Contract:** Assignment of any contract resulting from this invitation to bid will not be authorized.

30. **Indemnification**: The contractor shall defend and indemnify the county and all its officers, agents and employees against any suits, actions, or other claims brought on account of any injuries or damages to any person, persons, or property resulting from any negligent act or fault of the contractor, or of any agent, employee, subcontractor or supplier in the performance of any contract which may be awarded. The contractor shall pay any judgment with cost which may be obtained against the county growing out of such injury or damages.

31. **Patent Indemnity:** The contractor guarantees to save the county, its agents, officers, or employees harmless from liability of any nature or kind for use of any copyrighted or uncopyrighted composition, secret process, patented or unpatented invention, articles or appliances furnished or used in the performance of the contract, for which the contractor is not the patentee, assignee or licensee.

32. **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.

33. **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.

34. **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.

35. **Termination for Cause**: The county may terminate the contract for cause by sending written notice to the contractor of the contractor's default in the performance of any term of this agreement. Termination shall be without prejudice to any of the county's rights or remedies by law.

36. **Termination for Convenience**: The county may terminate the contract for its convenience at any time with 10 days' written notice to the contractor. In the event of termination for convenience, the county will pay the contractor for services performed. The county will compensate partially completed performance based upon a signed statement of completion submitted by the contractor, which shall itemize each element of performance completed.

37. **Governing Law**: This agreement shall be governed in accordance with the laws of the State of Georgia. The parties agree to submit to the jurisdiction in Georgia, and further agree that any cause of action arising under this agreement shall be required to be brought in state court in Fayette County, Georgia.

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

#1034-B Training Facility Reuse Renovation
_____
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 _____, ____, 2015 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 _____, 2015.

_____
NOTARY PUBLIC

My Commission Expires:

_____

Fayette County, Georgia
Checklist of Required Documents

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

BID #1034-B, TRAINING FACILITY REUSE RENOVATION

- 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: _____

EXCEPTIONS TO SPECIFICATIONS

If there are *ANY* exceptions or clarification(s) taken to the specifications of this bid, use this sheet and list the items you are taking an exception on. ANY exception(s) shall be explained in full.

COMPANY NAME_____

BIDDER'S QUALIFICATION SHEET – BID #1034-B

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 preferred.

REFERENCE ONE

Government/Company Name _____

City _____

Contact Person and Title _____

Phone _____ Contract Period _____

Email Address, (if known) _____

Scope of Work _____

REFERENCE TWO

Government/Company Name _____

City _____

Contact Person and Title _____

Phone _____ Contract Period _____

Email Address, (if known) _____

Scope of Work _____

REFERENCE THREE

Government/Company Name _____

City _____

Contact Person and Title _____

Phone _____ Contract Period _____

Email Address, (if known) _____

Scope of Work _____

BID #1034-B

COMPANY INFORMATION

Company_____

Physical Address of Business _____

_____

Mailing Address (**If Different**)_____

_____

Authorized Representative_____
(Print or Type)

Authorized Representative_____
(Signature)

Title_____

Email Address:_____

Telephone Number:( )_____

Cellular Number:( )_____

Fax Number:( )_____

DOCUMENT 00 11 16 – INVITATION TO BID

DEADLINE: Tuesday November 18, 2015 at 3:00 PM

An invitation to bid is hereby extended to the qualified contractors for the Fayette County Training Facility Reuse Renovation, 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 distributed to all bidders. Addenda will be held on file at the Fayette County Purchasing Department.

All questions and request for information (RFI) correspondence shall be in written form addressed only from the General Contractor and directed to Trina Barwicks at the Fayette County Purchasing Department by **Thursday November 13th at 3:00 pm**.
Emails are preferred and should be addressed to:
Trina Barwicks 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.

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 prior to the final RFI date notated above.

Bidder must comply with the following:

- The Bid must state a date or time of Certificate of Occupancy. 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 Bidder 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 October 23, 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 REUSE RENOVATION

IN THE EVENT THAT THIS PAGE IS **NOT** ATTACHED TO THE BID FORM OR PART OF THE BID PACKAGE, 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 FOR EVALUATION ON THE PREVIOUS PAGES, THE BIDDER SHALL ENTER "N/A" FOR THE 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 REUSE RENOVATION

A	General Conditions	Cost		$/S.F.	Subcontractors
101	Permits (BY OWNER)	0			
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	$1000.00			
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				
206	Landscape Allowance	$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	Brick Masonry				
304	Steel				
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	Aluminum Storefront System				
316	Storefront Windows (glazing and frames)				
317	Windows				
318	Metal Stairs and Railings				
319	Lighting Fixtures				
320	Finish Hardware				
321	Gypsum Wall Board Assemblies				
322	Ceiling Assemblies (2x2) & GWB				
323	Carpet				
324	Rubber base, wood base				
325	Porcelain tile				
326	Resilient Flooring				
327	Paint				
328	Fire Extinguishers and Accessories (Allow for Type A-B-C 10 lb.)				
329	Toilet Accessories				
330	Specialties, Misc. Items, Roll up Door & Canopies				
331	Plumbing				
332	HVAC				
333	Electrical				
334	Misc Finishes				
C	**Subtotal**				
D	**Recap of Construction Costs**				
	General Conditions (101-112)				
	Site Development/Grading(201-209)				
	Building Construction (301-334)				

END OF BID SUMMARY FORM

DOCUMENT 00 42 13 – BID FORM

This Bid Submitted by: _____

Address: _____

_____

Telephone: _____

Email: _____

DATE: _____

Dear Sir or Madam:

The undersigned Bidder declares that he has read and understands the Architectural drawings dated 10/23/15, 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, the following items including all associated labor, materials, and equipment are identified separately immediately following this page. 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 proposer 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 REUSE RENOVATION.**********

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 TRAINING FACILITY REUSE RENOVATION

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 affect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

1.4 SCHEDULE OF ALTERNATES

THE ALTERNATES LISTED BELOW SHOULD BE INCLUDED IN YOUR BID PACKAGE. THEY ARE NOT A PART OF THE BASE BID.

Alternate No. 1: (ADD) Provide costs associated with all necessary equipment and materials for complete roof replacement.

_____NO CHANGE _____ NOT APPLICABLE

_____DOLLARS ($ _____)

_____ADD _____DEDUCT _____calendar days to adjust the Contract Time for this alternate

Alternate No. 2: (DEDUCT) Provide deductive cost associated with all finishes and systems for the basement restrooms (Men's Shower/Locker RM# 207 & Women's Shower/Locker RM# 208) while maintaining finishes and construction of Corridor 201.

_____NO CHANGE _____ NOT APPLICABLE

_____DOLLARS ($ _____)

_____ADD _____DEDUCT _____calendar days to adjust the Contract Time for this alternate

Alternate No. 3: (DEDUCT) Provide deductive cost associated with all finishes and systems for the basement Multipurpose RM# 209, RM# 212, & RM# 213 while maintaining finishes and construction of Corridor 201.

_____NO CHANGE _____ NOT APPLICABLE

_____DOLLARS ($ _____)

_____ADD _____DEDUCT _____calendar days to adjust the Contract Time for this alternate

1.5 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this _____day of _____, 20_____.

B. Submitted By: _____(bidding firm or corporation)

C. Authorized Signature: _____

D. Signed by:_____(type or print)

E. Title: _____(owner/partner/president/vice president)

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. If AIA Document A201 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 may be examined during normal working hours.

END OF GENERAL CONDITIONS

SECTION 0110 00 - SUMMARY

PART 1 - GENERAL

1.1 PROJECT INFORMATION

A. Project: FAYETTE COUNTY TRAINING FACILITY REUSE RENOVATION

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 removal of existing interior walls and equipment; approximately 15,709 SF of new Type IIIB office and classroom space, Non-Sprinkled within an existing two story pre-manufactured steel building. Occupancy Type is Type B Business and Type A Assembly within existing structure.

Engineered Mechanical, Electrical and Plumbing drawings have been provided within the BID SET documents dated 10-23-15. 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. All I.T., telecommunication, audio/visual, and security equipment.

2. Residential appliances.

G. Work Under Separate Contracts:

1. Materials Testing and Inspecting Services. Refer to Section 01 40 00-Quality Requirements for contractor's responsibilities.

2. Building Signage

3. Furniture

4. Milo-Range simulator

H. Work by Owner:

1. All data and security wiring. Contractor should coordinate with Owner and ensure that all required conduit and boxes are provided for Owner's portion of work.

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 proposals 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

1.2 ALTERNATES

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to 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.

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 proposed 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 proposed substitution with those of the Work specified, a list of changes needed to other parts of the Work required to accommodate proposed substitution, and any proposed changes in the Contract Sum or the Contract Time should the substitution be accepted.
6. Architect will review the proposed 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 Proposal Requests: Architect will issue a detailed description of proposed changes in the Work.

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

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

D. On Owner's approval of a Proposal 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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALLOWANCES

A. Project Signage Allowance: Allow the sum of $1000 for materials and labor to build temporary 8 ft x 4 ft project sign.

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. Andy 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 proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit 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 proposed 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 reinspecting.

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 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 42 00 - REFERENCES

PART 1 - GENERAL

1.1 GENRAL REQUIREMENTS

A. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

B. Abbreviations and Acronyms: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association, Inc. (The)
AAADM	American Association of Automatic Door Manufacturers
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ABAA	Air Barrier Association of America
ABMA	American Bearing Manufacturers Association
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies, Inc. (The)
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America (The)
AHA	American Hardboard Association (Now part of CPA)
AHAM	Association of Home Appliance Manufacturers
AI	Asphalt Institute
AIA	American Institute of Architects (The)
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction

ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)
ALSC	American Lumber Standard Committee, Incorporated
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts, Inc.
APA	Architectural Precast Association
APA	APA - The Engineered Wood Association
APA EWS	APA - The Engineered Wood Association; Engineered Wood Systems
API	American Petroleum Institute
ARI	Air-Conditioning & Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASCE	American Society of Civil Engineers
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute (See ASCE)
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	ASME International (American Society of Mechanical Engineers International)
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International (American Society for Testing and Materials International)
AWCI	Association of the Wall and Ceiling Industry
AWCMA	American Window Covering Manufacturers Association (Now WCMA)
AWI	Architectural Woodwork Institute
AWPA	American Wood Protection Association (Formerly: American Wood Preservers' Association)
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
BICSI	BICSI, Inc.
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International)

BISSC	Baking Industry Sanitation Standards Committee
CCC	Carpet Cushion Council
CDA	Copper Development Association
CEA	Canadian Electricity Association
CEA	Consumer Electronics Association
CFFA	Chemical Fabrics & Film Association, Inc.
CGA	Compressed Gas Association
CIMA	Cellulose Insulation Manufacturers Association
CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CRRC	Cool Roof Rating Council
CPA	Composite Panel Association
CPPA	Corrugated Polyethylene Pipe Association
CRI	Carpet and Rug Institute (The)
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
CSA	CSA International (Formerly: IAS - International Approval Services)
CSI	Cast Stone Institute
CSI	Construction Specifications Institute (The)
CSSB	Cedar Shake & Shingle Bureau
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute)
DHI	Door and Hardware Institute
EIA	Electronic Industries Alliance
EIMA	EIFS Industry Members Association
EJCDC	Engineers Joint Contract Documents Committee
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association (Electrostatic Discharge Association)
ETL SEMCO	Intertek ETL SEMCO (Formerly: ITS - Intertek Testing Service NA)

FM Approvals	FM Approvals LLC
FM Global	FM Global (Formerly: FMG - FM Global)
FMRC	Factory Mutual Research (Now FM Global)
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.
FSA	Fluid Sealing Association
FSC	Forest Stewardship Council
GA	Gypsum Association
GANA	Glass Association of North America
GRI	(Part of GSI)
GS	Green Seal
GSI	Geosynthetic Institute
HI	Hydraulic Institute
HI	Hydronics Institute
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)
HPVA	Hardwood Plywood & Veneer Association
HPW	H. P. White Laboratory, Inc.
IAS	International Approval Services (Now CSA International)
IBF	International Badminton Federation (Now BWF)
ICEA	Insulated Cable Engineers Association, Inc.
ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)
IESNA	Illuminating Engineering Society of North America
IEST	Institute of Environmental Sciences and Technology
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.
ISO	International Organization for Standardization (Available from ANSI)
ISSFA	International Solid Surface Fabricators Association

ITS	Intertek Testing Service NA (Now ETL SEMCO)
ITU	International Telecommunication Union
KCMA	Kitchen Cabinet Manufacturers Association
LMA	Laminating Materials Association (Now part of CPA)
LPI	Lightning Protection Institute
MBMA	Metal Building Manufacturers Association
MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association, Inc.
MHIA	Material Handling Industry of America
MIA	Marble Institute of America
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International (National Association of Corrosion Engineers International)
NADCA	National Air Duct Cleaners Association
NAGWS	National Association for Girls and Women in Sport
NAIMA	North American Insulation Manufacturers Association
NBGQA	National Building Granite Quarries Association, Inc.
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCTA	National Cable & Telecommunications Association
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NeLMA	Northeastern Lumber Manufacturers' Association
NEMA	National Electrical Manufacturers Association
NETA	InterNational Electrical Testing Association
NFHS	National Federation of State High School Associations
NFPA	NFPA (National Fire Protection Association)
NFRC	National Fenestration Rating Council

NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association)
NOMMA	National Ornamental & Miscellaneous Metals Association
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)
NWWDA	National Wood Window and Door Association (Now WDMA)
OPL	Omega Point Laboratories, Inc. (Now ITS)
PCI	Precast/Prestressed Concrete Institute
PDCA	Painting & Decorating Contractors of America
PDI	Plumbing & Drainage Institute
PGI	PVC Geomembrane Institute
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America)
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections
RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service
SAE	SAE International
SDI	Steel Deck Institute
SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers (See ASCE)
SGCC	Safety Glazing Certification Council

SIA	Security Industry Association
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SMPTE	Society of Motion Picture and Television Engineers
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry
SSINA	Specialty Steel Industry of North America
SSPC	SSPC: The Society for Protective Coatings
STI	Steel Tank Institute
SWI	Steel Window Institute
SWRI	Sealant, Waterproofing, & Restoration Institute
TCA	Tile Council of America, Inc. (Now TCNA)
TCNA	Tile Council of North America, Inc.
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance
TMS	The Masonry Society
TPI	Truss Plate Institute, Inc.
TPI	Turfgrass Producers International
TRI	Tile Roofing Institute
UL	Underwriters Laboratories Inc.
UNI	Uni-Bell PVC Pipe Association
USGBC	U.S. Green Building Council
USITT	United States Institute for Theatre Technology, Inc.
WASTEC	Waste Equipment Technology Association
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Window Covering Manufacturers Association

WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association)
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association)
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California)
WMMPA	Wood Moulding & Millwork Producers Association
WSRCA	Western States Roofing Contractors Association
WWPA	Western Wood Products Association

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 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 proposed by Contractor after award of the Contract

1. Submit (3) copies of each request for product substitution
2. Submit requests a minimum of 21 days 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 proposed substitution
b) Detailed comparison of significant qualities of proposed 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 proposed substitution is accepted.
i) Complete breakdown of costs indicating the cost amount to be added to or deducted from the Contract Sum in the proposed substitution is accepted
j) Contractor's certification that proposed 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 proposed substitution to produce indicated results.

5. Architect will review the proposed 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 proposed product with those of the Work specified
3. Architect will review the proposed 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 proposed 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 02 41 19 – SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.

C. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 PREDEMOLITION MEETINGS

A. Predemolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For refrigerant recovery technician.

B. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

C. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.

D. Predemolition Photographs or Video: Submit before Work begins.

E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

F. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.8 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.9 FIELD CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

1. Before selective demolition, Owner will remove the following items:

a. <**Insert items to be removed by Owner**>.

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. Hazardous materials will be removed by Owner before start of the Work.
2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

D. Storage or sale of removed items or materials on-site is not permitted.

E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

1.10 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties. Notify warrantor before proceeding.

B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

PART 2 - PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.

C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

E. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs, preconstruction videotapes and/or templates.

1. Inventory and record the condition of items to be removed and salvaged. Provide photographs and/or video of conditions that might be misconstrued as damage caused by salvage operations.
2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

1. Comply with requirements for existing services/systems interruptions specified in Section 01 10 00 "Summary."

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
2. Arrange to shut off indicated utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.

    a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
    c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
    e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.

C. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Section 01 50 00 "Temporary Facilities and Controls."

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 01 50 00 "Temporary Facilities and Controls."

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining

construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly.

B. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Protect items from damage during transport and storage.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch (19 mm) at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.

B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, then remove concrete between saw cuts.

C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

E. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings."

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be salvaged or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.8 SELECTIVE DEMOLITION SCHEDULE

A. Existing Items to Be Removed and Salvaged: All existing kitchen equipment, exterior gas heaters at rear enclosed patio.

B. Existing Items to Remain: See drawings.

END OF SECTION 02 41 19

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.

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

SECTION 03 35 43 – POLISHED CONCRETE FINISHING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes polished concrete finishing[**, including staining**] [**and scoring**].

A Concrete for polished concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, initial finishing, and curing is specified in Section 033000 "Cast-in-Place Concrete."

b.Related Requirements:

1)Section 033000 "Cast-in-Place Concrete" for concrete not designated as polished concrete.

1.3 DEFINITIONS

A. Design Reference Sample: Sample designated by Architect in the Contract Documents that reflects acceptable surface quality and appearance of polished concrete.

END OF SECTION 03 35 43

SECTION 03 36 00 – DYE STAINED COLORED GROUND AND POLISHED CONCRETE

PART 1 GENERAL

1.1 SUMMARY

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

B. Section Includes:

1. Dye stained concrete interior floor slabs.

2. Grinding and polishing concrete surfaces

C. Related Sections:

3. Division 3 Section "Cast-In-Place Concrete" for general applications of concrete and coordination of sample submittal.

4. Division 7 Section "Joint Sealants" for colored sealant for joints.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM C309 "Liquid Membrane-Forming Compounds for Curing Concrete."

2. ASTM C494 "Standard Specification for Chemical Admixtures for Concrete."

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's complete technical data sheets for the following:
   1. Concrete dye stain
   2. Chemical lithium hardener
   3. Final finish

B. Samples for Initial Selection: Manufacturer's color charts showing full range of colors available.

C. Qualification Data: For firms indicated in "Quality Assurance" Article, including list of completed projects.

D. Submit the following in accordance with "Submittal Procedures."

E. Product data for each grinding machine, including all types of grinding heads, dust extraction system, joint filler, concrete densifying impregnator, penetrating sealer, and any other chemicals used in the process.

F. Applicators must submit a copy of their attendance to the manufacture's Polished Concrete Certified Training Program. .

G. Polished concrete samples: Size - 12"x12", for each Polished Concrete finish required.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Manufacturer with experience in the production of specified products.

B. Installer Qualifications: An installer with 5 years experience with work of similar scope and quality.

C. Obtain each specified material from same source and maintain high degree of consistency in workmanship throughout Project.

D. Notification of manufacturer's authorized representative shall be given at least 1-week before start of Work.

E. Certified Applicators:
1. Consult Scofield for a list of Certified Applicators in your area.

F. Pre-installation Conference: Conduct conference at project site to comply with requirements in "Project Management and Coordination." of Section 01 30 00.

G. Installer/Applicator shall be certified by chemical manufacturer and shall provide adequate number of skilled workmen who are thoroughly trained and experienced in the necessary craft.

H. Manufacturer's Certification: Provide a letter of acknowledgement from both the equipment and chemical manufacturer stating that the installer is a trained applicator and is familiar with proper procedures and installation requirements recommended by the manufacturer.

I. Dye Stained Ground and Polished Concrete Field Samples:
2. Provide under provisions of Division 1 Section "Quality Control."
3. At location on Project selected by Architect, place and finish a 4'x4' area.
4. Construct sample panel using processes and techniques intended for use on permanent work, including curing procedures. Include samples of control, construction, and expansion joints in sample panels. Field samples shall be produced by the individual workers who will perform the work for the Project.

5. See Part 4 – Schedules for cut and shine level and finish coat.
6. Edges should be included in mockup.
7. Accepted field sample provides visual standard for work of Section.
8. Field sample shall remain through completion of work for use as a quality standard for finished work.
9. See Architect before removal of field sample.

J. Environmental Limitations:

10. Comply with manufacturer's written instructions for substrate temperature and moisture content, ambient temperature and humidity, ventilation and other conditions affecting chemical performance.
11. Application of finish and dye system shall take place a minimum of 21 days prior to fixture and trim installation and/or substantial completion.
12. Finish concrete area shall be closed to traffic during finish floor application and after application for the time as recommended by the manufacturer.

1.5 DELIVERY, STORAGE AND HANDLING

A. All chemicals: Comply with manufacturer's instructions. Deliver in original, unopened packaging. Store in dry conditions.

1.6 PROJECT CONDITIONS

A. Dye Stained Concrete Environmental Requirements:

1. Schedule placement to minimize exposure to wind and hot sun before material has cured

1.7 PRE-JOB CONFERENCE

A. One week prior to placement of concrete finish a meeting will be held to discuss the Project and application materials.

B. It is suggested that the Architect, General Contractor, Subcontractor, and a Manufacturer's Representative be present.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURER

A. L. M. SCOFIELD COMPANY, Douglasville, Georgia 1-800-800-9900.

2.2 MATERIALS

A. Solvent based color liquid dye concentrate: by L. M. SCOFIELD COMPANY.

B. Provide manufacturer's companion Lithium Densifier and final finish product to help ensure color and protection.

C. Acceptable products:

1. SCOFIELD® Formula One™ Liquid Dye Concentrate by L. M. SCOFIELD COMPANY.
2. SCOFIELD® Formula One™ Lithium Densifier MP by L. M. SCOFIELD COMPANY.
3. SCOFIELD® Formula One™ Guard-W by L. M. SCOFIELD COMPANY.

D. Chemical Hardener/Densifiers Manufactured by L. M. SCOFIELD COMPANY:
   4. Materials:
      a. SCOFIELD® Formula One™-LD MP is a high performing hardening and dust proofing compound that is chemically reactive and permanently bonds to concrete formulated to be used in conjunction with integrally colored concrete as well as uncolored concrete.
      b. SCOFIELD® Formula One™ Guard-W is water-borne acrylic penetrating material formulated to protect polished concrete from normal staining and to enhance gloss.

   5. Planetary grinding equipment must be capable of providing a multiple step process starting with course metal bond diamonds and ending with fine resin bond diamonds.

E. SUBSTITUTIONS: The use of products other than those specified will be considered providing that the Contractor requests its use in writing within 14-days prior to bid date. This request shall be accompanied by the following:
   6. A certificate of compliance from material manufacturer stating that proposed products meet or exceed requirements of this Section.
   7. Documented proof that proposed materials have a 5-year proven record of performance, confirmed by at least 5 local projects that Architect can examine.

2.3 COLORS

A. Concrete Dye Stain:
   1. Liquid Dye Concentrate by L. M. SCOFIELD COMPANY.

B. See finish schedule for dye colors.

PART 3 EXECUTION

3.1 POLISHED CONCRETE APPLICATION

A. Applicator shall examine the areas and conditions under which work of this section will be provided and the General Contractor shall correct conditions detrimental to the timely and proper completion of the work and the Applicator shall not proceed until unsatisfactory conditions are resolved. Unless determined prior to bid, the condition of the floor before the polishing process is the responsibility of the General Contractor. The floor must be protected from damage during general construction.

B. Grind the concrete floor with metal bond diamonds removing construction debris until the specified Grade is obtained. The first cut must be performed with a metal bond diamond.

C. After the 400 grit resin bond diamond has been used apply liquid dye and liquid hardener according to the manufacturer's current literature. Allow 12 hours to cure before continuing.

D. Finish honing and polishing the floor to desired Class.

E. After the polishing process has been completed apply protection guard material according to the products current technical bulletin. Allow to cure for 2-4 hours.

F. Using a high-speed burnishing machine and diamond impregnated pads, burnish the surface to the desires gloss level.

G. Upon completion, the work shall be ready for final inspection and acceptance by the customer.

3.2 PROTECTION

A. The General Contractor is responsible for using Temporary Floor Protection throughout the project to safeguard the surface quality of concrete slabs before and after application of decorative finishes or installations of other materials.

B. All concrete floors that will be not be covered by other materials will be protected throughout the project. The concrete slab must be treated as a finished floor at all times during construction.

C. Temporary Floor Protection will be removed only while finish work to the concrete is being performed and will be replaced after the final finish has cured sufficiently.

D. Temporary Floor Protection will be Proguard Duracover as manufactured by L. M. Scofield Company, Douglasville, GA (800-800-9900). Seaming of the temporary floor protection will be performed with Scofield Proguard Heavy Duty Seaming Tape. Both products will be installed following the manufacturer's published installation procedures.

E. DO NOT APPLY THE HEAVY DUTY SEAMING TAPE TO BARE OR FINISHED FLOORS OR WALL SURFACES AT ANY TIME. IT WILL PERMANENTLY DAMAGE THE FLOOR

F. No substitutions will be allowed.

3.3 CLEANING

A. The work area shall be kept clean and free of debris at all times.

B. Remove slurry and dust from adjoining surfaces as necessary.

C. Dispose of material containers in accordance with local regulations.

D. Protect finished work until fully cured per manufacturer's recommendations

3.4 APPLICATORS

A. For a list of Certified Applicators, contact Scofield at 1-800-800-9900.

PART 4 SCHEDULES

4.1 CUT AND SHINE LEVELS

A. Cut Level (Depth of cut)

1. Grade 1 – LIGHT SAND FINISH

B. Shine Level (Gloss level)
1. Class 2 – MEDIUM REFLECTIVITY

END OF SECTION 03 36 00

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 12 00 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data Shop Drawings and mill test reports.

B. Comply with AISC's "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design," RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts," and AWS D1.1, "Structural Welding Code--Steel."

PART 2 - PRODUCTS

2.1 STRUCTURAL STEEL AND ACCESSORIES

A. Structural-Steel Shapes ASTM A 992/A 992M, Grade 50, high-strength, low-alloy columbium-vanadium steel, Plates, and Bars: ASTM A 36/A 36M, carbon steel.

B. Cold-Formed Structural-Steel Tubing: ASTM A 500, Grade B.

C. Steel Pipe: ASTM A 53, Type E or S, Grade B, standard weight (Schedule 40), black finish.

D. Anchor Rods, Bolts, Nuts: ASTM A 36/A 36M, unheaded rods.

E. Bolts, Nuts, and Washers: ASTM A 325, Type 1, high-strength heavy hex steel structural bolts, heavy hex carbon-steel nuts, and hardened carbon-steel washers, uncoated.

F. Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd, rust-inhibiting primer.

G. Grout: ASTM C 1107, nonmetallic, shrinkage resistant, premixed.

2.2 FABRICATION

A. Fabricate structural steel according to AISC specifications and tolerance limits of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for structural steel.

B. Shop Priming: Prepare surfaces according to SSPC-SP 2, "Hand Tool Cleaning" or SSPC-SP 3, "Power Tool Cleaning." Shop prime steel to a dry film thickness of at least 1.5 mils (0.038 mm). Do not prime surfaces to be embedded in concrete or mortar or to be field welded.

PART 3 - EXECUTION

3.1 ERECTION

A. Erect structural steel according to AISC specifications and within erection tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

B. Set base and bearing plates on wedges, shims, or setting nuts. Tighten anchor bolts, cut off wedges or shims flush with edge of plate, and pack grout solidly between bearing surfaces and plates.

C. Bolted Connections: Install and tighten non high-strength bolts, unless high-strength bolts are indicated. Snug tighten high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

D. Weld Connections: Comply with AWS D1.1.

E. Any steel member modified in the field (exposed metal, burned areas etc.), shall be prepped and reprimed to match shop primed areas.

END OF SECTION 05 12 00

SECTION 05 40 00 – COLD FORMED METAL FRAMING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Shop Drawings, and, material certificates.

B. Comply with AISI's "Specification for the Design of Cold-Formed Steel Structural Members" for calculating structural characteristics of cold-formed metal framing.

C. Comply with HUD's "Prescriptive Method for Residential Cold-Formed Metal Framing.

D. Comply with AWS D1.3, "Structural Welding Code--Sheet Steel."

E. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Galvanized Steel Sheet: ASTM A 653/A 653M, G60 zinc coated; Structural Steel (SS); Grade per drawings.

B. Steel Studs: C-shaped, with flange width of not less than 1-5/8 inches, minimum uncoated steel thickness of gages and of depths indicated in ASTM sizing standards.

C. Steel Track: U-shaped, minimum uncoated metal thickness as indicated but not less than that used with studs, with flange widths of 1-1/4 inches for of web depths indicated.

2.2 ACCESSORIES

A. Accessories: Fabricate from the same material and finish used for framing members, of manufacturer's standard thickness and configuration, unless otherwise indicated.

B. Cast-in-Place Anchor Bolts: ASTM F 1554, Grade 36, threaded carbon-steel hex-headed bolts and carbon-steel nuts; and flat, hardened-steel washers; zinc coated by hot-dip process according to ASTM A 153/A 153M, Class C.

C. Mechanical Fasteners: Corrosion-resistant coated, self-drilling, self-threading steel drill screws.

D. Insulation: ASTM C 665, Type I, unfaced mineral-fiber blankets.

E. Galvanizing Repair Paint: SSPC-Paint 20 or DOD-P-21035.

2.3 FRAMING

A. Install framing and accessories level, plumb, square, and true to line, and securely fastened, according to ASTM C 1007. Temporarily brace framing until entire integrated supporting structure has been completed and permanent connections are secured.
   1. Cut framing members by sawing or shearing; do not torch cut.

   2. Fasten framing members by welding or screw fastening.

   3. Install insulation in built-up exterior framing members.

   4. Fasten reinforcement plates over web penetrations larger than standard punched openings.

B. Erection Tolerances: Install cold-formed metal framing with a maximum variation of 1/8 inch in 10 feet and with individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

C. Studs: Install continuous top and bottom tracks securely anchored at corners and ends. Squarely seat studs against webs of top and bottom tracks. Space studs as indicated, set plumb, align, and fasten both flanges of studs to top and bottom tracks.
   1. Install and fasten horizontal bridging in stud system, spaced in rows not more than 48 inches apart.

   2. Install steel-sheet diagonal bracing straps to both stud flanges, terminate at and fasten to reinforced top and bottom track and anchor to structure.

   3. Install miscellaneous framing and connections to provide a complete and stable wall-framing system.

   4. Isolate non-load-bearing curtain-wall framing from building structure using vertical slide clips or deflection track to prevent transfer of vertical loads while providing lateral support.

D. Joists: Install and securely anchor perimeter joist track sized to match joists. Install joists bearing on supporting framing, brace and reinforce, and fasten to both flanges of joist track.

   1. Install bridging and fasten bridging at each joist intersection.

   2. Install miscellaneous joist framing and connections, including web stiffeners, closure pieces, clip angles, continuous angles, hold-down angles, anchors, and fasteners.

PART 3 - EXECUTION (Not Used)

END OF SECTION 05 40 00

SECTION 05 50 00 – METAL FABRICATIONS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Shop Drawings showing details of fabrication and installation.

PART 2 - PRODUCTS

2.1 METALS

A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

B. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 240/A 240M or ASTM A 666, Type 304.

C. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.

D. Rolled Steel Floor Plate: ASTM A 786/A 786M.

E. Steel Tubing: ASTM A 500.

F. Steel Pipe: ASTM A 53, standard weight (Schedule 40), black finish.

G. Slotted Channel Framing: Cold-formed steel channels, 1-5/8 by 1-5/8 inches thick, complying with MFMA-4.

H. Cast Iron: ASTM A 48/A 48M or ASTM A 47/A 47M.

I. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T6.

J. Aluminum-Alloy Rolled Tread Plate: ASTM B 632/B 632M, Alloy 6061-T6.

K. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.

2.2 GROUT

A. Nonshrink, Nonmetallic Grout: ASTM C 1107; recommended by manufacturer for exterior applications.

2.3 FABRICATION

A. General: Shear and punch metals cleanly and accurately. Remove burrs and ease exposed edges. Form bent-metal corners to smallest radius possible without impairing work.

B. Welding: Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. At exposed connections, finish welds and surfaces smooth with contour of welded surface matching those adjacent

C. Fabricate loose lintels from steel angles and shapes. Size to provide bearing length at each side of openings equal to one-twelfth of clear span, but not less than 8 inches.

D. Fabricate structural-steel door frames from structural shapes and bars fully welded together, with 5/8-by-1-1/2-inch steel channel stops. Plug-weld built-up members and continuously weld exposed joints.
   1. Apply clear lacquer to concealed surfaces of units set into concrete.

2.4 STEEL AND IRON FINISHES

A. Hot-dip galvanized steel fabrications at exterior locations.

B. Prepare uncoated ferrous metal surfaces to comply with SSPC-SP 3, "Power Tool Cleaning," and paint with a fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack.

B. Fit exposed connections accurately together to form hairline joints.

C. Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

D. Install pipe guards at exposed vertical pipes where not protected by curbs or other barriers. Install by bolting to wall or column with drilled-in expansion anchors.

E. Anchor bollards in concrete and fill solidly with concrete, mounding top surface.

END OF SECTION 05 50 00

SECTION 05 51 00 – METAL STAIRS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Shop Drawings and structural analysis data signed and sealed by a qualified professional engineer registered in the state where Project is located.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Provide stairs capable of withstanding a uniform load of 100 lbf/sq. ft. and a concentrated load of 300 lbf applied on an area of 4 sq. in. (2580 sq. mm). Uniform and concentrated loads need not be assumed to act concurrently.

B. Provide railings capable of withstanding a uniform load of 50 lbf/ft. and a concentrated load of 200 lbf applied to handrails and top rails of guards in any direction. Uniform and concentrated loads need not be assumed to act concurrently.

C. Provide railing infill capable of withstanding a concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft. Infill load and other railing loads need not be assumed to act concurrently.

2.2 METALS

A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

B. Steel Tubing: ASTM A 500 (cold formed) or ASTM A 513.

C. Rolled Steel Floor Plate: ASTM A 786/A 786M.

2.3 MISCELLANEOUS MATERIALS

A. Extruded Aluminum Nosings: Ribbed-type extruded-aluminum units with abrasive filler consisting of aluminum-oxide or silicon-carbide grits, or a combination of both, in an epoxy-resin binder. Apply clear lacquer to concealed surfaces of units set into concrete.

B. Concrete: Comply with Division 03 Section "Cast-in-Place Concrete" for normal-weight, air-entrained concrete with a minimum 28-day compressive strength of 3000 psi (20 MPa).

C. Welded Wire Fabric: ASTM A 185, 6 by 6 inches - W1.4 by W1.4.

2.4 FABRICATION

A. General: Shear and punch metals cleanly and accurately. Remove burrs and ease exposed edges. Form bent-metal corners to smallest radius possible without impairing work.

B. Welding: Use materials and methods that minimize distortion and develop strength of base metals. At exposed connections, finish welds and surfaces smooth.

C. Stair Framing: Fabricate stringers of steel channels. Construct platforms of steel plate or channel headers and miscellaneous framing members.

D. Metal-Pan Stairs: Form risers, subtread pans, and subplatforms to configurations shown from steel sheet of thickness needed to comply with performance requirements, but not less than 0.067 inch thick.

E. Steel Tube Railings: Fabricate railings to comply with requirements indicated, but not less than that needed to withstand indicated loads.

1. Configuration: see details in construction drawings.
2. Fabricate railings with welded connections. Cope components at connections to provide close fit, or use fittings designed for this purpose.
3. Form changes in direction of railings by bending or by inserting prefabricated fittings.
4. Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnecting components and for attaching to other work.
5. Connect posts to stair framing by direct welding.

F. Steel Tube Railing system (Interior) specifications: See Section 057360 and 055213.

2.5 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Finish metal stairs after assembly.

B. Prepare uncoated ferrous metal surfaces to comply with SSPC-SP 3, "Power Tool Cleaning," and paint with a fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Perform cutting, drilling, and fitting required for installing metal stairs. Set units accurately in location, alignment, and elevation, measured from established lines and levels and free of rack.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Place and finish concrete fill for treads and platforms to comply with Division 03 Section "Cast-in-Place Concrete." Install abrasive nosings with anchors fully embedded in concrete.

D. Attach handrails to wall with wall brackets. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.

END OF SECTION 05 51 00

SECTION 05 52 00 – METAL RAILINGS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Shop Drawings, structural analysis data signed and sealed by a qualified professional engineer registered in the state where Project is located.

PART 2 - PRODUCTS

2.1 RAILING SYSTEMS

A. Provide railings capable of withstanding a uniform load of 50 lbf/ ft. and a concentrated load of 200 lbf applied to handrails and top rails of guards in any direction. Uniform and concentrated loads need not be assumed to act concurrently.

B. Provide railing infill capable of withstanding a concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft. Infill load and other railing loads need not be assumed to act concurrently.

2.2 METALS

A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

B. Steel Pipe: ASTM A 53, Schedule 40.

C. Steel Tubing: ASTM A 500 (cold formed) or ASTM A 513.

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

2.3 OTHER MATERIALS

A. Nonshrink, Nonmetallic Grout: ASTM C 1107; recommended by manufacturer for exterior applications.

2.4 FABRICATION

A. Assemble railing systems in shop to the greatest extent possible. Use connections that maintain structural value of joined pieces.

B. Form changes in direction of railing members by bending or use prefabricated fittings.

C. Fabricate railing systems and handrails for connecting members by welding or with concealed mechanical fasteners and fittings.

D. Provide manufacturer's standard wall brackets, flanges, miscellaneous fittings, and anchors to connect handrail and railing members to other construction.

E. Provide wall returns at ends of wall-mounted handrails.

2.5 FINISHES

A. Steel Railings: Hot-dip galvanized after fabrication, ASTM A 123; cleaned and shop primed after galvanizing.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fit exposed connections accurately together to form tight, hairline joints.

B. Set railings accurately in location, alignment, and elevation and free of rack.

C. Coat concealed surfaces of aluminum that will be in contact with cementitious materials or dissimilar metals, with a heavy coat of bituminous paint.

D. Anchor posts in concrete by forming or core-drilling holes 5 inches deep and 3/4 inch greater than OD of post. Fill annular space between post and concrete with nonshrink, nonmetallic grout.

E. Attach handrails to wall with wall brackets.

END OF SECTION 05 52 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 60 – STAINLESS STEEL MODULAR CROSSBAR INFILL SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. 316 alloy stainless steel 1/2 inch (12 mm) diameter crossbar infill system for railing applications

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 samples.

1.3 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Not less than 3 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.

C. Regulatory Requirements:
1. Components and installation are to be in accordance with state and local code authorities.

D. Certifications:
1. Furnish certification that all components and fittings are furnished by the same manufacturer or approved by the primary component manufacturer.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the job site in good condition and properly protected against damage to finished surfaces.

B. Storage on site:
1. Store material in a location and in a manner to avoid damage. Stacking shall be done in a way, which will prevent bending.
2. Store material in a clean, dry location away from uncured concrete and masonry. Cover with waterproof paper, tarpaulin, or polyethylene sheeting in a manner that will permit circulation of air inside the covering.
3. Keep handling on site to a minimum. Exercise particular care to avoid damage to finishes of material.

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 modular crossbar railing infill system:
      a. Lavi Industries.
      b. C.R. Laurence Co., Inc.
      c. Approved equal.

2.2 MATERIALS AND FINISHES

A. Infill: 316 alloy stainless steel 1/2 inch (12 mm) diameter bar with mechanical fittings and attachment for field installation.
   1. Finish: Brushed Stainless
   2. Connectors: Radius Back.
      a. Radius back attaches to 1-1/2 inch (38.1 mm) to 2 inch (50.8 mm) diameter tubing.

B. Connector configurations:
   1. Left End
   2. Right End
   3. Center

C. Connector Fastener:
   1. 1/4"-20 x 1 inch (25 mm) Stainless Steel Flat Head Phillips Bolt CRL Cat. No. SRBOLT

PART 3 - EXECUTION

3.1 PREPARATION

A. Verify 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.

3.3 INSTALLATION

A. Install modular crossbar infills plumb, level, and true and in accordance with manufacturer's installation instructions and recommendations.

B. 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.

C. 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.

D. 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 per approved shop drawings.

3.4 CLEANING

A. Remove protective films from metal surfaces.

B. Clean metal surfaces with clean water and a mild detergent. Do not use abrasive chemicals, detergents, or other implements that may mar or gouge the material.

3.5 PROTECTION

A. Remove Institute protective measures required throughout the remainder of the construction period to ensure that all the materials do not incur any damage or deterioration.

B. Repair components damaged by subsequent construction activities in accordance with manufacturer's recommendations; replace damaged components that cannot be repaired to Architect's acceptance..

END OF SECTION 05 73 60

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 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 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/ft² 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/yd², 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 07411

SECTION 07 46 20 – FIBER CEMENT SIDING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fiber cement siding, panels, shingle, trim, fascia, moulding and accessories, James Hardie HZ10 Engineered for Climate Siding.

1.2 REFERENCES

A. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.

B. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

C. ASTM C1186 - Standard Specification for Flat Fiber-Cement Sheets

1.3 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

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. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches, representing actual product, color, and patterns.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.

B. 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, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.
4. Approved field samples may remain as part of completed Work.

1.5 DELIVERY, STORAGE, AND HANDLING

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

B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.6 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.7 WARRANTY

A. Product Warranty: Limited, non-pro-rated product warranty.
1. HardiPlank HZ10 lap siding for 30 years.
2. HardieTrim HZ10 boards for 15 years.
3. HardieSoffit HZ10 panels for 30 years.

B. Finish Warranty: Limited product warranty against manufacturing finish defects.
1. When used for its intended purpose, properly installed and maintained according to Hardie's published installation instructions, James Hardie's ColorPlus finish with ColorPlus Technology, for a period of 15 years from the date of purchase: will not peel; will not crack; and will not chip. Finish warranty includes the coverage for labor and material.

C. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-3464; Tel: 949-367-4980; Email: request info (info@jameshardie.com); Web: www.jameshardie.com

B. Equivalent products of other manufacturers will be considered in accordance with provisions specified in Section 01 60 00 – PRODUCT REQUIREMENTS.

2.2 SIDING

A. HardiPlank HZ10 lap siding, HardiPanel HZ10 vertical siding, HardieSoffit HZ10 panels and HardieShingle HZ10 siding requirement for Materials:
1. Fiber-cement Siding - complies with ≈STM C 1186 Type A Grade II.
2. Fiber-cement Siding - complies with ≈STM E 136 as a noncombustible material.
3. Fiber-cement Siding - complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
4. CAL-FIRE, Fire Engineering Division Building Materials Listing - Wildland Urban Interface (WUI) Listed Product.
5. National Evaluation Report No. NER 405 (BOCA, ICBO, SBCCI, IBC, IRC).
6. City of Los Angeles, Research Report No. 24862.
7. Miami Dade County, Florida Notice of Acceptance 07-0418.04.
8. US Department of Housing and Urban Development Materials Release 1263d
9. California DSA PA-019.

10. City of New York M EA 223-93-M.
11. Florida State Product Approval FL889.
12. Texas Department of Insurance Product Evaluation EC-23.

B.

C. Lap Siding: HardiePlank HZ10 Lap siding with a sloped top, beveled drip edge and nailing line as manufactured by James Hardie Building Products, Inc.
   1. Type: Select Cedarmill 7-1/4 inches with 6 inches exposure.

D. Trim:
   1. HardieTrim HZ10 boards as manufactured by James Hardie Building Products, Inc.
   2. HardieTrim HZ10 Fascia boards as manufactured by James Hardie Building Products, Inc.
   3. HardieTrim HZ5 Crown moulding manufactured by James Hardie Building Products, Inc.
   4. Artisan HZ10 Accent trim as manufactured by James Hardie Building Products, Inc
   5. Refer to Contract Drawings for information on required sizes and thicknesses.

2.3 FASTENERS

A. Metal Framing:
   1. Metal Framing: 1-1/4 inches No. 8-18 by 0.375 inch head self-drilling, corrosion resistant S-12 ribbed buglehead screws.

2.4 FINISHES

A. Factory Primer: Provide factory applied universal primer.
   1. Primer: Factory primed by James Hardie.
   2. Topcoat: Refer to Exterior Finish Schedule.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Minimum 20 gauge 3-5/8 inch C-Stud 16 inches maximum on center or 16 gauge 3-5/8 inches C-Stud 24 inches maximum on center metal framing complying with local building codes, including the use of water-resistive barriers and/or vapor barriers where required. Minimum 1-1/2 inches face and straight, true, of uniform dimensions and properly aligned.
   1. Install water-resistive barriers and claddings to dry surfaces.
   2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
   3. Protect siding from other trades.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Install a water-resistive barrier as required in accordance with local building code requirements.

D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.

E. Install weather barrier as specified in SECTION 07 25 00 in accordance with local building code requirements.

3.3 INSTALLATION - HARDIEPLANK HZ10 LAP SIDING AND ARTISAN HZ10 LAP SIDING

A. Install materials in strict accordance with manufacturer's installation instructions.

B. Starting: Install a minimum 1/4 inch thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1-1/4 inches wide laps at the top. The bottom edge of the first plank overlaps the starter strip.

C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.

D. Align vertical joints of the planks over framing members.

E. Maintain clearance between siding and adjacent finished grade.

F. Locate splices at least one stud cavity away from window and door openings.

G. Use off-stud metal joiner in strict accordance with manufacturer's installation instructions.

H. Wind Resistance: Where a specified level of wind resistance is required Hardieplank lap siding is installed to framing members and secured with fasteners described in Table No. 2 in National Evaluation Service Report No. NER-405

I. Locate splices at least 12 inches away from window and door openings.

J. Face nail to sheathing.

K. Locate splices at least 12 inches (305 mm) away from window and door openings

3.4 INSTALLATION - HARDIETRIM HZ10 BOARDS

A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.

B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.

C. Place fasteners no closer than 3/4 inch and no further than 2 inches from side edge of trim board and no closer than 1 inch from end. Fasten maximum 16 inches on center.

D. Maintain clearance between trim and adjacent finished grade.

E. Trim inside corner with a single board trim both side of corner.

F. Outside Corner Board Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch from edge spaced 16 inches apart, weather cut each end spaced minimum 12 inches apart.

G. Allow 1/8 inch gap between trim and siding.

H. Seal gap with high quality, paint-able caulk.

I. Fasten through overlapping boards. Do not nail between lap joints.

J. Overlay siding with single board of outside corner board then align second corner board to outside edge of first corner board. Do not fasten HardieTrim boards to HardieTrim boards.

K. Install HardieTrim Fascia boards to rafter tails or to sub fascia.

3.5 FINISHING

A. Finish unprimed siding with a minimum one coat high quality, alkali resistant primer and one coat of either, 100 percent acrylic or latex or oil based, exterior grade topcoats or two coats high quality alkali resistant 100 percent acrylic or latex, exterior grade topcoat within 90 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

B. Finish factory primed siding with a minimum of one coat of high quality 100 percent acrylic or latex or oil based exterior grade paint within 180 days of installation. Follow paint manufacturer's written product recommendation and written application 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 07 46 00

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 41 13 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Structural Performance: Provide systems, including anchorage, capable of withstanding loads indicated.

1. Main-Framing-Member Deflection: Limited to 1/175 of clear span or 3/4 inch, whichever is smaller.
2. Structural Testing: Systems tested according to ASTM E 330 at 150 percent of inward and outward wind-load design pressures do not evidence material failures, structural distress, deflection failures, or permanent deformation of main framing members exceeding 0.2 percent of clear span.

B. Air Infiltration: Limited to 0.06 cfm/sq. ft. of system surface area when tested according to ASTM E 283 at a static-air-pressure difference of 1.57 lbf/sq. ft. (75 Pa).

C. Water Penetration: Systems do not evidence water leakage when tested according to ASTM E.

D. Average U-Factor: Per AAMA 1503

E. Submittals: Product Data, Shop Drawings, and color Samples.

1. For entrance systems, include hardware schedule and locations.

PART 2 - PRODUCTS

2.1 ALUMINUM-FRAMED STOREFRONTS

A. Products:

1. Tubelite 14000 Series or Approved Equal

B. Accessible Entrances: Comply with ICC/ANSI A117.1.

C. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated; ASTM B 209 sheet; ASTM B 221 extrusions.

D. Glazing: As specified in Division 8 Section "Glazing."

E. Sealants and Joint Fillers: For joints at perimeter of systems as specified in Division 7 Section "Joint Sealants."

F. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.

G. Doors: 1-3/4-inch- (44.5-mm-) thick glazed doors with minimum 0.125-inch- (3.2-mm-) thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods. Provide snap-on extruded-aluminum glazing stops, and preformed gaskets.

1. Door Design: As indicated on door schedule.
2. Accessible Doors: Smooth surfaced for width of door in area within 10 inches (255 mm) above floor or ground plane.
3. Interior Doors: Provide ANSI/BHMA A156.16 silencers, three on strike jamb of single-door frames and two on head of double-door frames.
4. Exterior Doors: Provide compression weather stripping at fixed stops. At other locations, provide sliding weather stripping retained in adjustable strip mortised into door edge.
5. Hardware: As specified in Division 8 Section "Door Hardware".

H. Fasteners and Accessories: Compatible with adjacent materials, corrosion resistant, nonstaining, and nonbleeding. Use concealed fasteners except for application of door hardware.

I. Fabrication: Fabricate framing in profiles indicated for flush glazing (without projecting stops). Provide subframes and reinforcing of types indicated or, if not indicated, as required for a complete system. Factory assemble components to greatest extent possible. Disassemble components only as necessary for shipment and installation.

1. Door Framing: Reinforce to support imposed loads. Factory assemble door and frame units and factory install hardware to greatest extent possible. Reinforce door and frame units for hardware indicated. Cut, drill, and tap for factory-installed hardware before finishing components.

J. Aluminum Finish: Comply with NAAMMs "Metal Finishes Manual for Architectural and Metal Products." Fluoropolymer three-coat coating system complying with AAMA 2605.

1. Color: TBD from all manufacturer prefinished colors available.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Isolate metal surfaces in contact with incompatible materials, including wood, by painting contact surfaces with bituminous coating or primer, or by applying sealant or tape recommended by manufacturer.

B. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.

C. Set continuous sill members and flashing in full sealant bed as specified in Division 7 Section "Joint Sealants" to produce weathertight installation.

D. Install framing components true in alignment with established lines and grades to the following tolerances:

1. Variation from Plane: Limit to 1/8 inch in 12 feet (3 mm in 3.7 m).
2. Alignment: For surfaces abutting in line, limit offset to 1/16 inch (1.5 mm). For surfaces meeting at corners, limit offset to 1/32 inch (0.8 mm).
3. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch (3 mm).

E. Install doors without warp or rack. Adjust doors and hardware to provide tight fit at contact points and smooth operation.

END OF SECTION 08 41 13

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 BuildingEnvelope

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 22 16 – NON-STRUCTURAL METAL FRAMING

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.

C. Sizes, widths, and gauges to meet current ASTM standards.

2.2 METAL FRAMING AND SUPPORTS

A. Steel Framing Members, General: ASTM C 754.

1. Steel Sheet Components: ASTM C 645. Thickness specified is minimum uncoated base-metal thickness.
2. Protective Coating: ASTM A 653/A 653M, G40 (Z120), hot-dip galvanized zinc coating.

B. Suspended Ceiling and Soffit Framing:

1. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch diameter, or double strand of 0.0475-inch- diameter wire.
2. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, and 0.162-inch diameter.
3. Carrying Channels: Cold-rolled steel, 0.0538 inch thick, 2 inches deep.
4. Furring Channels: Steel studs, 0.0179 inch (0.454 mm) thick, in depth indicated
5. Grid Suspension System for Interior Ceilings: Interlocking, direct-hung system.

C. Partition and Soffit Framing:

1. Studs and Runners: In depth indicated and a minimum of 0.0179 inch (0.454 mm) thick.
2. Flat Strap and Backing: Minimum of 0.0179 inch (0.454 mm) thick.

3. Rigid Hat-Shaped Furring Channels: In depth indicated and a minimum of 0.0179 inch (0.454 mm)
4. Resilient Furring Channels: 1/2 inch (12.7 mm) deep, with single- or double-leg configuration.
5. Cold-Rolled Furring Channels: 0.0538 inch (1.37 mm) thick, 3/4 inch (19.1 mm) deep.
6. Z-Furring: In depth required by insulation, 1-1/4-inch (31.8-mm) face flange, 7/8-inch (22.2-mm) wall-attachment flange, and 0.0179 inch (0.454 mm) thick.

2.3 ACCESSORIES

A. General: Comply with referenced installation standards.

1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

B. Acoustical Sealant for Concealed Joints: Nonsag, latex sealant complying with ASTM C 834.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation and with United States Gypsum's "Gypsum Construction Handbook."

1. Gypsum Plaster Assemblies: Also comply with ASTM C 841.
2. Portland Cement Plaster Assemblies: Also comply with ASTM C 1063.
3. Gypsum Veneer Plaster Assemblies: Also comply with ASTM C 844.

B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

C. Isolate steel framing from building structure, except at floor, to prevent transfer of loading imposed by structural movement.

1. Where studs are installed directly against exterior walls, install asphalt-felt or foam-gasket isolation strip between studs and wall.

D. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.

END OF SECTION 09 22 16

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 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 65 66 – RESILIENT ATHLETIC FLOORING

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Resilient sheet flooring.

1.2 REFERENCES

A. ASTM International:
   1. ASTM D 2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine.
   2. ASTM E 648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
   3. ASTM E 662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
   4. ASTM F 137 - Standard Test Method for Flexibility of Resilient Flooring Materials with Cylindrical mandrel Apparatus.
   5. ASTM F 386 - Standard Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces.
   6. ASTM F 410 - Standard Test Method for Wear Layer Thickness of Resilient Floor Coverings by Optical Measurement.
   7. ASTM F 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
   8. ASTM F 925 - Standard Test Method for Resistance to Chemicals of Resilient Flooring.
   9. ASTM F 970 - Standard Test Method for Static Load Limit.
   10. ASTM F 1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing.
   11. ASTM F 1700 - Standard Specification for Solid Vinyl Floor Tile.
   12. ASTM F 1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
   13. ASTM F 2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In Situ Probes.

1.3 SUBMITTALS

A. Submit under provisions of Section 01 30 00 and 01 33 00.

B. Product Data: Submit three copies of 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.
   4. Maintenance recommendations

C. Selection Samples: For each finish product specified, two sets of each type, colors and finish of resilient flooring and accessory required, indicating full range of color and pattern variation as proof of application compliance.

D. Verification Samples: For each finish product specified, three complete sets of each type, colors and finish of resilient flooring and accessory required, indicating color and pattern of actual product, including variations, as proof of application compliance.

E. Certification: Upon request by Architect manufacturer to provide third party written test results of physical characteristics and performance attributes performed by an independent laboratory.

F. Closeout Submittals: Submit two copies of the following:
   1. Maintenance and operation data includes - methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.
   2. Warranty documents specified herein.

G. Flame Spread Certification: Submit manufacturer's certification that resilient flooring furnished for areas indicated to comply with required flame spread rating has been tested and meets or exceeds indicated or required standard.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications
   1. Whenever possible, provide each type of resilient flooring and accessories as provided by a single manufacturer, including recommended primers, adhesives, sealants, finish accessories and leveling compounds.
   2. Manufacturer must be an established firm specializing in the production of prefabricated P.V.C. Sport Surfaces with the ISO 9001 rating. All Sports Flooring materials must be manufactured by the manufacturer of the product being submitted. Manufacturer must have completed, and can produce in writing at least 10 projects of similar size and magnitude where this product has been used.

B. Installer Qualifications:
   1. Minimum five years experience and completed at least five (5) projects of similar magnitude, material and complexity.
   2. No Installer will be allowed to install specified material if tools are rented or leased from manufacturer or distributor or another outside source.
   3. Owner may request to visit installer's office and warehouse facilities.
   4. Installer must be a recognized and approved sports flooring contractor by the manufacturer or distributor.

C. 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, color, sheen and finished appearance are approved by Architect.

1.5 DELIVERY, STORAGE, AND HANDLING

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

B. Store all rolls standing upright; do not lay rolls down for long periods.

C. Flooring material and adhesive shall be acclimated to the installation area for a minimum of 48 hours prior to installation.

1.6 PROJECT CONDITIONS

A. Environmental Requirements/Conditions: In accordance with manufacturer's recommendations. Areas to receive flooring shall be clean, fully enclosed, weather tight with the permanent HVAC set at a uniform temperature of at least 68 degrees F (20 degrees C) 72 hours prior to and during and for not less than 48 hours after installation. The flooring material shall be conditioned in the same manner prior to installation. Ambient temperature shall not exceed 100 degrees F (38 degrees C) after installation.

B. Close spaces to traffic during resilient flooring installation and for a period of time after installation as recommended in writing by the manufacturer.

C. Install resilient flooring materials and accessories after other finishing operations, including painting, have been completed.

D. Where demountable partitions and other items are indicated for installation on top of sheet resilient flooring material, install flooring material before these items are to be installed.

E. All material shall be from the same batch and the rolls shall be installed in consecutive order. If material from more than one batch is to be used, the job shall be laid out so that different batch numbers are not installed side by side.

1.7 WARRANTY

A. Signature Sports Flooring warrants its SignaFlex and welding rods to be free from manufacturing defects for 10 years from the date of purchase and the wear layer from excessive wear under normal usage in recommended applications for a ten (10) year period, as long as the product is installed according to the manufacturer's recommendations.

1.9 EXTRA MATERIALS

A. Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 1 closeout submittals requirements.
   1. Quantity: Furnish quantity of flooring units in full rolls equal to 2 percent of amount installed.
   2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra materials.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer:

Signature Sports Flooring, a division of Signature Systems Group, LLC
50 East 42nd Street 14th Floor, New York, NY 10017:
Telephone: (212) 953-1116, (800) 705-1544: Fax (212) 953-1117

Email: info@signaturesportsflooring.com

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

2.2 PROPRIETARY PRODUCT(S)

A. SignaFlex manufactured by Signature Sports Flooring for indoor commercial applications.
   1. 6.5mm SignaFlex rolled sheet vinyl

B. SignaGrip adhesives manufactured by Signature Sports Flooring

2.3 PRODUCT DESCRIPTION

A. The SignaFlex material shall be a prefabricated sport surface with flooring design and smooth embossed surface as supplied by Signature Sports Flooring. Embossing of wood design and solid colors must be the same; varying embossing or surface textures will not be allowed. Printing of wood design shall closely replicate standard strip flooring in size (approximately 2-1/4" width), color, board length and grain appearance. The design shall be protected by a clear layer of pure PVC and top coated with a factory applied polyurethane finish. Intermediate layers of calendared PVC and non-woven fiberglass provides balance and stability. Foam force reduction layer is high-density closed cell PVC foam with honeycomb embossing and must be applied in one continuous manufacturing process. Laminated or adhered foam layers will not be allowed. Flooring will contain anti-fungal treatment.

2.3.2 SIGNAFLEX – 6.5MM ROLLED SHEET VINYL

Resilient Sheet Flooring: SignaFlex 6.5mm by Signature Sports Flooring with the following characteristics:

A. Construction:	High performance polyurethane top layer, clear 100% vinyl wear layer, high-res image layer, reinforcing woven fiberglass inner layer, closed cell foam backing
B. Reference Specification:	ASTM F 1303, Type I, Grade 1.

Physical Data:

A. Roll Size:	6.5mm x 1.8m width x 15m long rolls (.256" x 71" x 49.2')
B. Weight:	4.20 kg/m^2
C. Backing Class:	4-ply fused backing system that includes 1.7mm PVC internal layer and polyester mesh backing.
D. Colors:	See Manufacturer's standard colors. Custom colors available
E. Total Thickness:	6.5mm (0.256in.)

Performance Characteristics:

A.	Sliding Properties:	21 (ASTM E303)
B.	Shock Absorption:	≥25% (DINV18032-2)
C.	Vertical Deformation:	0.5 (DIN V18032-2)
D.	Vertical Ball Rebound:	100% (DIN V18032-2)
E.	Behavior under Rolling Load:	1000N (DIN V18032-2)
F.	Taber Abrasion:	.16g (ASTM D4060)
G.	Flammability (Burning Pill):	Pass (ASTM D2859)
H.	Residual Impression:	.32mm (DIN V18032-2)
I.	Dimensional Stability	< 0.1% (EN 13746)
J.	Area Deflection:	0% (DIN V18032-2)

2.4 SIGNAGRIP ADHESIVES

A. To ensure complete compatibility with the flooring material, specially compounded adhesives shall be utilized. All adhesives shall be approved by Signature Sports Flooring and applied in strict accordance with the adhesive manufacturer's instructions.

PART 3 — EXECUTION

3.1 EXAMINATION

A. Installer to field check and approve of job conditions prior to commencement of installation of SignaFlex. Do not begin installation until substrates have been properly prepared.

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

C. The installation of the resilient flooring shall not begin until the work of all other trades has been completed, especially overhead trades.

D. Areas to receive flooring shall be adequately lighted during all phases of the installation process.

3.2 CONCRETE SUB-FLOOR PREPARATION

A. The concrete base (installed by others), shall be properly cured, dry and clean (usually six weeks or more are necessary for drying depending on water content and atmospheric conditions). Variations in the concrete slab shall not exceed + or - 1/8 inch in a 10 foot radius. Cracks, grooves and other imperfections shall be repaired and the slab shall be swept broom clean by the general contractor. All work required to put the sub flooring in acceptable condition shall be the responsibility of

the general contractor. All concrete sub floor installations should follow the resilient flooring institutes recommendations (RFI) or (RMA).

B. Concrete sub-floor, on or below grade, shall be adequately waterproofed beneath the slab and the perimeter with a suitable vapor barrier. No concrete curing compounds should be used.
C. The building shall be dry and closed in. Flooring installation shall not begin until the installer is familiar with existing sub-floor conditions, and after completion of all other work in this area. During cold weather the room temperature shall be maintained at a minimum of 75°F.

D. When the flooring contractor is satisfied that the concrete is suitable for covering, he may then begin to lay out the Signaflex material.

E. The moisture content of the slab should not exceed 3 lbs per 1000 square feet in a 24 hour period, according to R.M.A. testing method. (ASTM 1869-0)

3.3 INSTALLATION

A. General:
   1. Flooring material and adhesive shall be acclimated to the installation area for a minimum of 48 hours prior to installation. SignaFlex must be stored standing upright on end.
   2. Use only Signature Sports Flooring SignaFlex adhesives.
   3. Use a 1/32 inch by 1/16 inch by 1/32 inch (.75 mm by 1.5 mm by .75 mm) U-notch trowel only.
   4. Material shall always be visually inspected prior to installations. Any material installed with visual defects will not be considered a legitimate claim as it pertains to labor cost.
   5. Signature Sports Flooring sheet vinyl is dimensionally stable. It will not shrink or compress when properly installed. If cut too full, it may result in a bubble.
   6. Install all cuts and rolls in consecutive sequence.
   7. Do not reverse sheets for seaming.
   8. Ensure that all recommendations for sub-floor and jobsite conditions are met prior to beginning the installation. Start of installation will indicate that Installer has accepted these conditions.

B. Preparation of Subfloor
   1. The General Contractor will supply a smooth, flat concrete finish which will be achieved manually or mechanically. The slab will have a tolerance of ±1/8" in a 10' radius. No curing compounds are to be used.
   2. The concrete sub floor will be cured for a minimum of at least sixty (60) days.
   3. Saw cuts are recommended in lieu of construction key way and expansion joints.
   4. The concrete floor temperature will have to be maintained at a minimum of 75°F during the installation and the Contractor will make sure that the moisture content does not exceed 3 lbs per 1000 square feet in a 24 hour period, according to R.M.A. testing method. (ASTM 1869 04).
   5. Before proceeding with any work, inspect the sub floor surface and report in writing to the Project Manager and the General Contractor any visible defects on the surface such as cracks, bumps, rough areas, or variations in planarity.

6. No grease, oil, paint, dust, concrete curing compounds or any contamination should be remaining on the concrete sub floor.
7. Before proceeding with the Signaflex material installations, clean the concrete surface to remove any dirt or foreign materials. Sanding of the sub floor is mandatory.
8. The General Contractor shall patch and repair all cracks, voids, and other imperfections of concrete with high strength portland cement based patching material - Ardex K-15 or equal, approved by the manufacturer. Do not use gypsum based patching materials. If concrete is out of level then it should be properly leveled by an experienced underlayment contractor using cement based material that will provide a minimum of 3,000 p.s.i. compressive strength and sufficient bond to existing clean concrete surface - Ardex K-15 or equal, approved by the manufacturer. After completion of sanding, patching and leveling, vacuum or sweep entire surface of concrete to remove loose dust and dirt before starting the installation of the material.

Note: Should moisture content exceed 3lbs per 1000 sqft in a 24 hour period, according to R.M.A. Testing Method (ASTM 1869-04), Manufacturer recommends use of SignaFlex moisture barrier.

C. Adhesion Methods:
   1. Glue material to sub-floor no sooner than 24 hours after the material has been laid in position.
   2. Use an acrylic type adhesive, applied with a fine tooth notched trowel, giving coverage of between 100 to 150 square feet per gallon.
   3. Recommended Adhesives as approved by manufacturer.
   4. Recommended trowel gauge: 1/16" x 1/16" x 1/16" square notched. Throw away blades are recommended in order to maintain proper notch size. Use one blade for approximately 700 square feet of floor area.

D. Recommendations using Adhesives
   1. Follow adhesive manufacturer's instructions after the material has been in place for 24 hours.
   2. Respect the open time of the adhesive which will vary according to temperature, humidity, porosity, and absorption rate of the sub-floor.
   3. Insufficient open time will cause bubbling. Too long of an open time will result in poor adhesive transfer.

E. Installation of First Sheet Vinyl
   1. Strike a chalk line across the center of the playing area. Be sure that the line is square to the room.
   2. Lay the first length of Signaflex along this chalk line and then work progressively outward, leaving a small gap between the sheets to allow the material to relax.
   3. Material should be unrolled in place for 24 hours prior to adhesion.
   4. Starting from the center line and working outward, fold the sheets back halfway and apply the adhesive to the sub-floor.
   5. Position the first half into the adhesive, and then repeat this procedure with the second half.
   6. Continue laying sheets by butting the edges or overlapping and double cutting through both sheets using a strait edge.

F. Rolling
   1. Manually: Immediately after material is positioned onto the adhesive.
   2. Using a roller: roll entire surface crossways using a 75 pound (minimum) flooring roller.

G. Seaming of Joints (Heat Welding Method)
   1. Mechanical routing using an electric routing machine by Turbo Heat Welding tools or equal approved by the manufacturer.
      a. Foam Backed Sheet - Rout only through depth of wear layer.
   2. Manual Seaming
      a. This must be done with a heat welding gun with variable temperature control and a speed weld nozzle by Turbo Heat Welding tools or equal approved by manufacturer.
      b. Nozzle size is 4mm
      c. Avoid forcing welding rod into the seam to ensure a satisfactory finish.
      d. For all types of welding equipment, observe manufacturer's instructions, particularly with regard to speed of welding.
      e. Chalk both sides of the seam to avoid scorching and shinning of the material during the welding procedures.
   3. Automatic Electric Welding Machine (Required in Large Areas)
      a. This is done using a Turbo type automatic welding machine with a variable temperature hot air gun and a multi-outlet nozzle. Set the pressure of the guide to avoid forcing the weld into the seam (see tool manufacturer's installation procedure).

H. Finishing
   1. Trimming is done in two stages once the welding rod and material have cooled.
   2. First, trim using a cable slide.
   3. Second, trim flush with the floor using a spatula or hook-billed knife.
   4. After the welding rod is trimmed smooth or flush with the top surface, check the entire seam to ensure that the welding cord is bonded properly and is flush with the top wear layer.

3.4 HEAT WELDING

A. Heat welding is the recommended procedure for sheet vinyl seams, coving and corner fill pieces. Professionally heat welded seams provide a strong, watertight, hygienic, monolithic surface.

B. The welding rod is made from PVC which is designed to melt at the same temperature as the PVC of the sheet flooring, permanently fusing the two together.

C. Heat welding shall be done after the flooring adhesive has set up, usually the following day.

D. Seam edges shall be slightly gapped and vertical. Wide gapped or undercut seams will prevent quality welds.

E. The depth of the groove shall be 1/2 to 2/3 the thickness of the material. Be careful not to go too deep. The groove shall also be centered along the two edges. This is very important to ensure proper strength and bonding of the welding rod.

F. Clean grooves thoroughly of all foreign contamination, including dust.

G. Use only professional quality welding equipment that will maintain sufficient temperatures. Many types, sizes and styles of welding tips are available today. A tip shall be chosen to produce a quality weld without damaging the appearance of the sheet vinyl.

H. Preheat welding gun before beginning. Temperature shall be set to approximately 750 degrees. It is recommended that the installer perform a test weld on some waste material to verify proper temperature and welding speed prior to welding installed material.

I. Determine the correct welding speed by ensuring that the welding rod actually fuses into the groove. A small ridge shall form on either side of the welding rod, at the vinyl surface. If no ridge forms, you have not heat welded the seam.

J. While the welding rod is still warm, trim off 1/2 -2/3 the excess rod with a spatula knife and trim plate in one continuous movement.

K. After the rod has cooled to room temperature, make the final trim pass using only a razor sharp spatula knife in one continuous movement.

L. Apply a glaze to the surface of the trimmed weld. Remove the tip from the welding gun. Hold the gun a few inches above the welded seam and apply hot air along the seam until the surface of the weld rod begins to shine. The shine should not exceed the sheen level of the flooring. The glazed seam will be less porous, smoother, and less noticeable.

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 09 65 66

SECTION 09 68 13 - TILE CARPETING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and Samples.

B. Extra Materials: Deliver to Owner carpet tiles equal to 5 percent of each type and color carpet tile installed, packaged with protective covering for storage.

PART 2 - PRODUCTS

2.1 CARPET TILE

A. Products:
1. See finish schedule on drawings.

B. Primary Backing: Manufacturer's standard material

C. Secondary Backing: Manufacturer's standard material

D. Size: See finish schedule on drawings

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install in accordance with manufacturers recommendations and instructions

B. Comply with CRI 104, Section 13, "Carpet Modules (Tiles)".

C. Install borders parallel to walls.

END OF SECTION 09 68 13

SECTION 09 80 00 – ACOUSTIC TREATMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Acoustiblok sound isolation material, and installation accessories.

1.2 RELATED DOCUMENTS

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

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: The manufacturer shall be a firm with a minimum of five years of successful experience in manufacture of products with similar requirements.

B. Installer Qualifications: The installer shall be a firm with a minimum of two years of successful experience in installation of products with similar requirements.

C. Materials Qualifiction: Provide ASTM, ANSI, or UL Std test reports from independent laboratories with NVLAP or equivalent certification of standards compliance, documenting product performance specified for:

1. Acoustical properties.
2. Physical properties
3. Fire-related properties.

D. Receiving Inspection:

1. Verify quantities received and condition of materials received.

2. Verify the dimensions of Acoustiblok material are in compliance with materials specified.

3. Verify dimensions and configuration of any mechanical parts or assemblies received, are in compliance with assemblies specified.

E. Onsite Storage:

1. Provide secure storage for all materials.

2. Exposure of Acoustiblok sound isolation material to sunlight is permissible. Acoustiblok material must be clean and dry for installation. Do not permit the material to be creased, cut, or punctured.

3. Acoustiblok material freezes at -40 ° F (-40 ° C). Do not unroll material at this temperature or below, as the material will crack. Freeze and thaw cycles do not affect the physical or acoustic properties of Acoustiblok.

F. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.1 MANUFACTURERES

A. Provide Acoustiblok Inc. sound isolation membrane material or equal alternative.

B. Provide Acoustiblok Iron Grip Tape

C. Provide Acoustiblok Sound Sealant caulk

D. Provide Acoustiblok AcoustiMat underlayment material (for enhanced isolation in floor/ceiling installations).

E. Provide fasteners per paragraph 2.2 Materials, subsection E, Fasteners.

F. Provide PAC International Inc. Resilient Sound Isolation Clips (for enhanced isolation wall and ceiling assemblies).

G. Provide PAC International Inc. RSIC-AMI Window Mullions (for enhanced isolation where exterior windows present a flanking sound path).

2.2 MATERIALS

A. Acoustiblok sound isolation membrane, 16 oz

1. Dimensions:

Width 54" ± 0.125" (1.372 meters ± 3.175 mm)
Rolls 30', 60', 350' (9.14, 18.29, 106.68 meters)
Material thickness 0.11" ± 0.03" (2.79 mm ± 0.76 mm)

Weight, per roll:

30' (9.14 m)	= 150 lb.	(68 kg)
60' (18.29 m)	= 300 lb.	(136 kg)
350' (106.68 m)	= 1600 lb.	(725.75 kg)

2. Physical Properties:

a. Weight 1 lb. square foot (4.89 kg square meter)
b. Tensile strength min. 510 PSI
c. Color black (high UV resistance)
d. Composition: Proprietary mass loaded vinyl based compound

3. Acoustical Properties:

a. Minimum STC 26 per ASTM E90-02 and ASTM E413-87
Minimum sound attenuation 19 dBA @ 100 Hz.

b. STC and/or IIC ratings of tested wall and floor/ceiling construction configurations, as provided by manufacturer's literature

and verified by independent laboratory tests conducted in compliance with ASTM E90-02, ASTM E413-87, and/or ASTM E989-89

4. Environmental Performance:

a. Heat tolerance: 200 degrees F (93 ° C) for 7 days, less than 1% shrink, no deformation

b. Material freezes at -40 ° F (-40 ° C). Do not unroll, flex, or handle frozen material (other than as a roll), as it will crack and break.

c. UV resistant, not affected by water, detergents

d. No fungal or algal growth and no visible disfigurement, per ASTM D3273 and ASTM D3274 (rating = 10).

5. Fire Related Properties:

a. UL Classified for use in fire rated wall and floor/ceiling designs of the U300, U400, V400, and L500 series, per UL Fire Resistance Directory 2006, vol 1.

B. Acoustiblok sound isolation membrane, 32 oz

1. Dimensions:

Width 54" ± 0.125" (1.372 meters ± 3.175 mm)
Rolls 100' (30.48 meters)
Material thickness 0.22" ± 0.03" (5.58 mm ± 0.76 mm)

Weight, per roll:

100' (30.48m) = 900 lb. (408.24 kg)

2. Physical Properties:

a. Weight 2 lb. square foot (9.78 kg square meter)

b. Tensile strength min. 510 PSI

c. Color black (high UV resistance)

d. Composition: Proprietary mass loaded vinyl based compound

3. Acoustical Properties:

a. Minimum STC 32 per ASTM E90-02 and ASTM E413-87

b. STC and/or IIC ratings of tested wall and floor/ceiling construction configurations, as provided by manufacturer's literature and verified by independent laboratory tests conducted in compliance with ASTM E90-02, ASTM E413-87, and/or ASTM E989-89

4. Environmental Performance:

a. Heat tolerance: 200 degrees F (93 ° C) for 7 days, less than 1% shrink, no deformation

b. Material freezes at -40 ° F (-40 ° C). Do not unroll, flex, or handle frozen material (other than as a roll), as it will crack and break.

c. UV resistant, not affected by water, detergents

C. Acoustiblok Iron Grip Tape

1. Application: As a joint sealing tape

2. Dimensions and packaging: Tape is 2" (50.8 mm) wide, 2.0 mil (51 microns) thick, packaged 60 yards (54.86 meters) per roll. 24 rolls per case.

3. Quantity required: As specified to tape all joints in Acoustiblok material as installed.

4. Acoustical, Mechanical, and Fire Related properties

a. Acoustical properties n/a, air tight seal only

b. Mechanical properties: One sided tape, formulated to adhere to Acoustiblok sound isolation material. (Note: Common adhesive tapes release from Acoustiblok in 4 to 10 days.)

c. Fire related properties: U.L. recognized and CSA accepted.

5. Environmental performance:

Chemical	Appearance
Isopropyl Alcohol	No Change
Detergent	No Change
Engineer Oil at 250°F (121°)	No Change
Water for 48 hours	No Change

Temperature Resistance 300° (149°C) for 24 hours: Slight discoloration and shrinkage. -40°F (-40°C) for 10 days: No change noted Humidity Resistance: 24 Hours at 100°F(38°C) and 100% relative humidity: No change noted.

D. Acoustiblok Acoustical Sound Sealant Caulk

1. Application: As an acoustical caulk

2. Packaging: 10 Oz (0.296 liters) Tube, 1 lb. (0.454 kg) ea. 12 tubes per case.

3. Quantity required: Estimate requirement for caulking Acoustiblok joints and edges where required, and for caulking to seal penetrations (air holes) in partitions incorporating Acoustiblok. One tube provides approximately 25 feet (7.62 meters) of linear coverage (typical caulk bead).

4. Acoustical, Mechanical, and Fire Related properties

a. Acoustical properties: Provides air-tight seal and significant acoustical isolation. All acoustical test results for wall and floor/ceiling designs provided by Acoustiblok, employ Acoustiblok Acoustical Sound Sealant Caulk.

b. Mechanical properties: A high bonding resilient caulk which will reliably adhere to Acoustiblok sound isolation material and other construction components. Formulated for interior use only.

c. Fire related properties: Exceeds the specifications for ASTM E-136 and conforms to all National Building Codes, including BOCA, CABO, SBCCI, ICBO, NFPA and the 2003 International Building Codes. Pass ASTM E-814 (UL 1479)

E. Acoustiblok AcoustiPad underlayment material

1. Application: To enhance acoustical and mechanical isolation (STC, IIC) in floor/ceiling construction.

2. Dimensions and Packaging: Material is 0.25" (0.635 cm) thick. Packaged in rolls, 35 ft x 4 ft (9.75 meters x 1.22 meters).

3. Quantity required: Estimate requirement by calculating area of floor(s) where this material will be applied.

4. Acoustical, Mechanical, and Fire Related properties

a. Acoustical properties: Mechanical decoupler only

b. Mechanical properties: Resilient high density, high stability polymer foam, formulated to decouple audio frequency vibration between layered structures and materials. Typical application: Lay on top of decking to isolate an Acoustiblok layer from the decking, before flooring is installed.

c. Fire related properties: U.L. recognized and CSA accepted.

F. Fasteners

1. Staple Caps

a. Mfg part number(s), dimensions and packaging shall be specified per manufacturer documentation. Consult Acoustiblok Inc. for recommendations.

b. Quantity required shall be estimated based on design and site specific considerations.

2. Tin Caps

a. Mfg part number(s), dimensions and packaging shall be specified per manufacturer documentation. Consult Acoustiblok Inc. for recommendations.

b. Quantity required shall be estimated based on design and site specific considerations.

3. Wafer Headed Screws

a. Mfg part number(s), dimensions and packaging shall be specified per manufacturer documentation. Consult Acoustiblok Inc. for recommendations.

b. Quantity required shall be estimated based on design and site specific considerations.

G. PAC INTERNATIONAL INC. RSIC SOUND ISOLATION CLIPS

1. Application: Enhanced acoustical isolation of drywall and other materials in wall and ceiling assemblies from framing components.

2. Mfg part number(s), dimensions and packaging shall be specified per manufacturer documentation

3. Quantity required shall be estimated based on design and site specific considerations.

4. Acoustical, Mechanical, and Fire Related: Specifier shall review the acoustical, mechanical, and fire related properties in the manufacturer's documentation.

H. PAC INTERNATIONAL INC. RSIC-AMI WINDOW MULLION

1. Application: Enhanced acoustical isolation of architectural spaces with adjoining exterior windows (control flanking path transmission).

2. Mfg part number(s), dimensions and packaging shall be specified per manufacturer documentation

3. Quantity required shall be estimated based on design and site specific considerations.

4. Acoustical, Mechanical, and Fire Related: Specifier shall review the acoustical, mechanical, and fire related properties in the manufacturer's documentation.

I. RESILIENT CHANNEL

1. Application: Enhanced acoustical isolation of drywall and other materials in wall and ceiling assemblies.

2. Mfg part number(s), dimensions and packaging shall be specified per manufacturer documentation

3. Quantity required shall be estimated based on design and site specific considerations.

4. Acoustical, Mechanical, and Fire Related: Specifier shall review the acoustical, mechanical, and fire related properties in the manufacturer's documentation.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

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

3.2 PREPARATION

A. Assure that the Acoustiblok sound isolation material is clean and dry.

B. Follow manufacturer's guidelines for materials prep and handling.

3.3 INSTALLATION

A. Install in accordance with manufacturer's suggestions.

B. Apply fasteners per Acoustiblok installation guide and fastener manufacturer's guidelines.

C. Installers shall apply Acousticaulk, tape, and scrap sound isolation material as necessary to preserve the isolation's acoustical integrity, where the isolation material is mechanically penetrated (electrical outlet and switch boxes, etc.).

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Correct any materials or mechanical damage or deficiencies before substantial completion.

END OF SECTION 09 80 00

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 21 13 – PLASTIC TOILET COMPARTMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid plastic toilet compartments and urinal screens.

B. Related Sections:

1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

A. ASTM International (ASTM):

1. A167 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

2. B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

3. E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. National Fire Protection Association (NFPA) 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth

1.3 SYSTEM DESCRIPTION

A. Compartment Configurations:
1. Toilet partitions: Floor mounted, overhead braced.
2. Urinal screens: Wall mounted.

1.4 SUBMITTALS

A. Submittals for Review:
1. Shop Drawings: Include dimensioned layout, elevations, trim, closures, and accessories.
2. Product Data: Manufacturer's descriptive data for panels, hardware, and accessories.
3. Samples: 2x3 samples showing available colors and 4 x 4 inch samples in each color chosen.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 5 years experience in manufacture of solid plastic toilet compartments with products in satisfactory use under similar service conditions.

B. Installer Qualifications: Minimum 5 years experience in Work of this Section.

1.6 WARRANTIES

A. Provide manufacturer's 25 year warranty against breakage, corrosion, and delamination under normal conditions

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Contract Documents are based on products by Scranton Products.

B. Substitutions: Allowed under provisions of Division 01.

2.2 MATERIALS

A. Doors, Panels and Pilasters:
1. High density polyethylene (HDPE), fabricated from polymer resins compounded under high pressure, forming single thickness panel.
2. Waterproof and nonabsorbent, with self-lubricating surface, resistant to marks by pens, pencils, markers, and other writing instruments.
3. 1 inch thick with edges rounded to 1/4 inch radius.
4. Fire hazard classification: Not required.
5. Color: See schedules on drawings.

B. Aluminum Extrusions: ASTM B221, 6463-T5 alloy and temper.

C. Stainless Steel: ASTM A167, Type 304.

2.3 HARDWARE

A. Hinges:

1. Stealth integral hinge from door and pilaster material with exposed metal parts on interior of stall.

B. Door Strike and Keeper:
1. 6 inches long, fabricate from heavy-duty extruded aluminum with bright dip anodized finish, with wrap-around flanges secured to pilasters with stainless steel tamper resistant Torx head sex bolts.
2. Bumper: Extruded black vinyl.

B. Latch and Housing:
1. Heavy-duty extruded aluminum.
2. Latch housing: Bright dip anodized finish.
3. Slide bolt and button: Black anodized finish.

C. Coat Hook/Bumper:
1. Combination type, chrome plated Zamak.
2. Equip outswing handicapped doors with second door pull and door stop.

D. Door Pulls: Chrome plated Zamak.

2.4 COMPONENTS

A. Doors and Dividing Panels: 55 inches high, mounted 14 inches above finished floor, with aluminum heat-sinc fastened to bottom edges.

B. Pilasters: 82 inches high, fastened to pilaster sleeves with stainless steel tamper resistant Torx head sex bolt.

C. Pilaster Sleeves: 3 inches high, 20 gauge stainless steel, secured to pilaster with stainless steel tamper resistant Torx head sex bolt.

D. Wall Brackets: 54 inches long, heavy-duty aluminum, bright dip anodized finish, fastened to pilasters and panels with stainless steel tamper resistant Torx head sex bolts.

E. Headrail: Heavy-duty extruded aluminum, anti-grip design, clear anodized finish, fastened to headrail bracket with stainless steel tamper resistant Torx head sex bolt and at top of pilaster with stainless steel tamper resistant Torx head screws.

F. Headrail Brackets: 20 gauge stainless steel, satin finish, secured to wall with stainless steel tamper resistant Torx head screws.

PART 2 EXECUTION

2.1 INSTALLATION

A. Install compartments in accordance with manufacturer's instructions and approved Shop Drawings.

B. Install rigid, straight, plumb, and level.

C. Locate bottom edge of doors and panels 14 inches above finished floor.

D. Provide uniform, maximum 3/8 inch vertical clearance at doors.
E. Not Acceptable: Evidence of cutting, drilling, or patching.

2.2 ADJUSTING

A. Adjust doors and latches to operate correctly.

END OF SECTION 10 21 13

SECTION 10 21 16 – PLASTIC SHOWER AND DRESSING COMPARTMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Solid plastic shower compartments.

B. Related Sections:

1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

A. ASTM International (ASTM):

1. B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
2. E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. National Fire Protection Association (NFPA) 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth

1.3 SUBMITTALS

A. Submittals for Review:

1. Shop Drawings: Include dimensioned layout, elevations, trim, closures, and accessories.
2. Product Data: Manufacturer's descriptive data for panels, hardware, and accessories.
3. Samples: 2x3 samples showing available colors and 4 x 4 inch samples in each color chosen.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 5 years experience in manufacture of solid plastic toilet compartments with products in satisfactory use under similar service conditions.

B. Installer Qualifications: Minimum 5 years experience in Work of this Section.

1.5 WARRANTIES

A. Provide manufacturer's 25 year warranty against breakage, corrosion, and delamination under normal conditions

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Contract Documents are based on products by Scranton Products.

B. Substitutions: Allowed under provisions of Division 01.

2.2 MATERIALS

A. Doors, Panels and Pilasters:

1. Solid Plastic fabricated from polymer resins compounded under high pressure, forming single thickness panel.
2. Waterproof and nonabsorbent, with self-lubricating surface, resistant to marks by pens, pencils, markers, and other writing instruments.
3. 1 inch thick with radius edges.
4. Fire hazard classification: Not required.
5. Color: See schedules on drawings.

B. Aluminum Extrusions: ASTM B221, 6463-T5 alloy and temper.

C. Shower Curtains: Vinyl, 42 inches wide x 72 inches high, hung with aluminum curtain hooks with self-lubricating Delrin slides.

2.3 COMPONENTS

A. Panels: 76 inches high, mounted to pilasters with continuous brackets and to panels with continuous extruded aluminum brackets or continuous extruded aluminum shower corner brackets.

B. Pilasters: 82 inches high, fastened to panels with continuous brackets.

C. Headrail: Heavy-duty extruded aluminum, anti-grip design, clear anodized finish, fastened to headrail brackets and top of pilaster using stainless steel tamper-resistant Torx head screws.

D. Headrail Brackets: 20 gauge stainless steel, secured using stainless steel tamper-resistant Torx head screws.

E. Brackets: 76 inches long, extruded aluminum, clear anodized finish, attached using stainless steel tamper-resistant Torx head screws.

PART 1 EXECUTION

1.1 INSTALLATION

A. Install compartments in accordance with manufacturer's instructions and approved Shop Drawings.

B. Install rigid, straight, plumb, and level.

C. Locate bottom edge of doors and panels 14 inches above finished floor.

D. Not Acceptable: Evidence of cutting, drilling, or patching.

END OF SECTION 10 21 16

MODERCO

741S Series Individual Panels

Part 1 - General

1.01 DESCRIPTION

A. General

1. Furnish and install operable partitions and suspension system. Provide all labor, materials, tools, equipment, and services for operable walls in accordance with provisions of contract documents.

1.02 RELATED WORK BY OTHERS

A. Preparation of opening will be by General Contractor. Any deviation of site conditions contrary to approved shop drawings must be called to the attention of the architect.

B. All header, blocking, support structures, jambs, track enclosures, surrounding insulation, and sound baffles as required in 1.04 Quality Assurance.

C. Pre-punching of support structure in accordance with approved shop drawings.

D. Paint or otherwise finishing all trim and other materials adjoining head and jamb of operable partitions.

1.03 SUBMITTALS

A. Complete shop drawings are to be provided prior to fabrication indicating construction and installation details. Shop drawings must be submitted within 60 days after receipt of signed contract.

1.04 QUALITY ASSURANCE

A. Preparation of the opening shall conform to the criteria set forth per ASTM E557 Standard Practice for Architectural Application and Installation of Operable Partitions.

B. The partition STC (Sound Transmission Classification) shall be achieved per the standard test method ASTM E90-04 and E413-04. Test run under ASTM procedures prior to E90-04 shall not be permitted. All tests must be from an independent, currently operating, NIST and NVLAP-accredited Laboratory available to verify results.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Proper storage of partitions before installation, and continued protection during and after installation will be the responsibility of the General Contractor.

1.06 WARRANTY

A. Partition Panels shall be guaranteed for a period of two years with all mechanical parts including track and carriers guaranteed for a period of five years. This guarantee is against defects in material or workmanship of manufacturer’s product.

MODERCO

Part 2 - Products

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by the following:
   1. Moderco inc.

2.02 MATERIALS

A. Product to be top supported 741S Series individual panels as manufactured by Moderco inc.
   1. Panels shall be nominally 4" [100mm] thick, in manufacturer's standard widths up to 48" [1230mm].
   2. Panel faces shall be steel backed with proper acoustical material. Panel faces shall be welded to the internal steel frame. Panel faces shall be formed to protect the panel edges.
   3. Frames shall be made of steel and be welded. No vertical face trim shall be allowed.
   4. Interlocking vertical seals between the panels shall consist of tongue and groove dual-durometer PVC reversible astragals creating a shock-absorbing, deep nesting acoustical interlock between panels.
   5. Horizontal top seals shall be continuous contact multi-fingered vinyl.
   6. Horizontal bottom seals shall automatically operate as the panels are positioned, providing 2" [50mm] nominal operating clearance, and exert downward force when extended. Crank type shall not be acceptable.

B. Weight of the panels shall be between 7,5 to 8,0 lbs./sq. ft. [37 to 39 kg/sq.m] *(based on STC value selected)* plus or minus 1 lb. based on options selected.

C. Suspension system:
   1. Track shall be clear anodized tempered aluminum with soffit trim of clear anodized aluminum providing a transition to the ceiling. Track shall include support brackets and hanger rods, spaced to manufacturer's standards.
      a. Each panel shall be supported by two dual horizontal wheel trolley assemblies made of glass-reinforced, self lubricating nylon with steel precision ground bearings. Carrier design shall use a counter rotating concept to move panels along the track and through 90 degree "L", "T", & "X" intersections. Carriers using friction discs shall not be permitted.

D. Finishes
   1. Face finish shall be:
      a. Factory applied reinforced vinyl wall-covering with woven backing, weighing 20 oz. or more per lineal yard [465 g/m]. Color shall be selected from manufacturer's standard color selector.
   2. Frame color shall be standard Dark.
   3. Aluminum track and soffit shall be clear anodized.

MODERCO

2.03 OPERATION

A. Panels shall be manually operated, top supported, moved individually from the storage area, positioned in the opening, and seals set.
B. Automatic Bottom Seals
   1. Bottom seals shall automatically activate as panels are deployed / positioned without the use of any handle or action by the operator and shall automatically retract when panels are moved to be stored.
C. Final partition closure to be by:
   1. Telescopic closure panel incorporating an expanding jamb member operated from either side of the panel with a removable handle. Panel shall be capable of compensating for minor out-of-plumb wall conditions and provide a positive vertical seal between partition and building structure.

2.04 ACOUSTICAL PERFORMANCE

A. Acoustical performance shall have been tested at an NIST and NVLAP-accredited, independent laboratory in accordance with ASTM E90-04 or more recent Test Standards. Standard panel construction shall have obtained a minimum STC rating of 50.
   1. Copies of the written test report are to be made available upon request. Tests must have been conducted at a laboratory available for verification of results.

Part 3 - Execution

A. Installation.
   1. The complete installation of the operable wall system shall be by an authorized factory-trained installer and be in strict accordance with the approved shop drawings and manufacturer's standard printed specifications, instructions, and recommendations.
B. Cleaning
   1. All track and panel surfaces shall be wiped clean and free of handprints, grease, and soil.
   2. Packing and other installation debris shall be removed from the job site.
C. Training
   1. Installer shall demonstrate proper operation and maintenance procedures to owner's representative.
   2. Operating handle and owner's manuals shall be provided to owner's representative.

END OF SECTION 10 22 39

SECTION 10 28 00 – TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, No. 4 finish (satin), 0.0312-inch (0.8-mm) minimum nominal thickness unless otherwise indicated.

B. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

C. Galvanized-Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

D. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

E. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of six keys to Owner's representative.

2.2 TOILET AND BATH ACCESSORIES

A. Manufacturers:

1. See schedules on drawings.

B. Products:

1. See schedules on drawings

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install accessories using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

1. Install grab bars to withstand a downward load of at least 250 lbf (1112 N), when tested according to method in ASTM F 446.

B. Adjust accessories for unencumbered, smooth operation and verify that mechanisms function properly. Replace damaged or defective items. Remove temporary labels and protective coatings.

END OF SECTION 10 28 00

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 22 40 00 - PLUMBING FIXTURES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data for each type of plumbing fixture.

B. Comply with requirements of Public Law 102-486, "Energy Policy Act," regarding water flow rate and water consumption of plumbing fixtures.

C. Comply with applicable standards below:

1. National Sanitation Foundation Construction: NSF 61.
2. Public Law 90-480, "Architectural Barriers Act"; and Public Law 101-336, "Americans with Disabilities Act."
3. Public Law 102-486, "Energy Policy Act."

PART 2 - PRODUCTS

2.1 Provide plumbing fixtures as specified and as scheduled on the drawings.

PART 3 - EXECUTION

3.1 INSTALLATIONS

A. Install fitting insulation kits on fixtures for people with disabilities.

B. Install fixtures with flanges and gasket seals.

C. Install flush valves for accessible water closets and urinals with handle mounted on wide side of compartment. Install other actuators in locations that are easy for people with disabilities to reach.

D. Fasten wall-hanging plumbing fixtures securely to supports attached to building substrate when supports are specified, and to building wall construction where no support is indicated.

E. Fasten floor-mounted fixtures to substrate. Fasten fixtures having holes for securing fixture to wall construction, to reinforcement built into walls.

F. Fasten wall-mounted fittings to reinforcement built into walls.

G. Fasten counter-mounting plumbing fixtures to casework.

H. Secure supplies to supports or substrate within pipe space behind fixture.

I. Install individual supply inlets, supply stops, supply risers, and tubular brass traps with cleanouts at fixture.

J. Install water-supply stop valves in accessible locations.

K. Install traps on fixture outlets. Omit traps on fixtures having integral traps. Omit traps on indirect wastes, unless otherwise indicated.

L. Install escutcheons at wall, floor, and ceiling penetrations in exposed, finished locations and within cabinets and millwork. Use deep-pattern escutcheons where required to conceal protruding pipe fittings.

M. Seal joints between fixtures and walls, floors, and counters using sanitary-type, one-part, mildew-resistant, silicone sealant. Match sealant color to fixture color.

N. Install piping connections between plumbing fixtures and piping systems and plumbing equipment. Install insulation on supplies and drains of fixtures for people with disabilities.

O. Ground equipment. Tighten electrical connectors and terminals according to UL 486A and UL 486B.

END OF SECTION 22 40 00

SECTION 23 38 13 - INTEGRATED FIRE SUPPRESSION RANGE HOODS

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies fully integrated, pre-engineered fire suppression range hood systems.

1.2 DEFINITIONS

A. Range hood, unit, kitchen hood and hood system; for purposes of this specification section, these terms all have the same definition.

B. Residential grade fire suppression: a hood suppression system that fulfills the 300A standard, being designed to protect a residential-grade cooking appliance that is used within a commercial space.

C. Eyebrow, compensating, short circuit, short cycle types are not allowed.

1.3 QUALITY CONTROL

A. Installer Qualifications: Experienced in mechanical equipment installation or supervised by an experienced mechanical equipment installer.

1. Where required to complete equipment installation, electrician and plumber shall be licensed in jurisdiction where project is located.

B. NSF Compliance: Equipment bears NSF Certification Mark (when required)

C. UL Listing: Equipment has been evaluated according to UL or ETL 300A and is labeled for intended use.

D. Fire-Protection Systems: to be pre-engineered and factory integrated into the design of the hood

F. In-Use Service: The manufacturer maintains that the system can be operated or maintained by any qualified maintenance technician. However, the manufacturer will offer web-based certification training by request. The manufacturer does not provide field service.

1.4 SUBMITTALS

A. Submit in accordance with Section 01 30 00, ADMINISTRATIVE REQUIREMENTS and 01 33 00 DIGITAL SUBMITAL PROCEDURES.

B. Manufacturer's Literature and Data:

1. Include manufacturer's address and telephone number.
2. Include catalog or model numbers, and illustrations and descriptions of ventilators and accessories.

C. Installation Drawings: Show dimensions; method of assembly; and details of installation, adjoining construction, coordination with service utilities, and other work required for a complete installation.

D. Field Test Reports: Indicate whether demonstration will be necessary, dates and times of tests and certify test results.

E. Operating Instructions: Include operating instructions covering operation of all components and maintenance procedures covering proper cleaning and necessary lubrication or adjustments to controls.

1.5 WARRANTY

A. Warrant equipment to be free from defects in materials and workmanship in accordance with requirements of "Warranty of Construction" article in FAR clause 52.246-21.

1.6 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.

B. ICC Evaluation Service Listing Criteria #1031 (LC1031)

C. ICC Evaluation Services PMG Listing #1122 (PMG1122)

D. UL or ETL Standard 300A

PART 2 – PRODUCTS

2.1 EXHAUST HOODS

A. The hood shall be constructed of 18 & 20 gauge (type 304) polished stainless steel. Hood shall have fire suppression system factory installed into the hood system. Activation of the mechanical fire suppression system shall be by 212 or 280-degree fusible link (30" vs. 36" sizes). Fire suppression agent will be Amerex 660 Low PH wet chemical suppressant. Unit shall include centrifugal fan with air delivery of 380 to 610 cfm depending of calibration of unit. Unit shall include fuel shutdown option for Gas, Electric or Dual Element Devices. The hood system will also have multiple alarm and monitoring contacts factory installed into the hood.

B. Designer to verify CFM and pressure drop with manufacture.

	Width	Fan Type	Venting	CFM (at hood)	DUCT LENGTH (max)
D1030-F_	30"	INTERNAL	FRONT (recirc)	140 CFM	N/A
D1030-F_ (NFPA101)	30"	INTERNAL	FRONT (recirc)	**500 CFM**	N/A
D1030-R_	30"	INTERNAL	REAR EXPELLING	250 CFM	N/A
D1030-R_ (NFPA101)	30"	INTERNAL	REAR EXPELLING	**500 CFM**	N/A
D1030-I_-DF	30"	In-Line Duct Fan	Vertcal Duct	470 CFM	35 FEET
D1030-I_-DF (NFPA101)	30"	In-Line Duct Fan	Vertcal Duct	**510 CFM**	35 FEET
D1030-I_-WF	30"	Exterior Wall Fan	Vertcal Duct	150 CFM	20 FEET
D1030-I_-WF (NFPA101)	30"	Exterior Wall Fan	Vertcal Duct	**550 CFM**	20 FEET
D1036-F_	36"	INTERNAL	FRONT (recirc)	140 CFM	N/A
D1036-F_ (NFPA101)	36"	INTERNAL	FRONT (recirc)	**500 CFM**	N/A
D1036-R_	36"	INTERNAL	REAR EXPELLING	250 CFM	N/A
D1036-R_ (NFPA101)	36"	INTERNAL	REAR EXPELLING	**500 CFM**	N/A
D1036-I_-DF	36"	In-Line Duct Fan	Vertcal Duct	470 CFM	35 FEET
D1036-I_-DF (NFPA101)	36"	In-Line Duct Fan	Vertcal Duct	**510 CFM**	35 FEET
D1036-I_-WF	36"	Exterior Wall Fan	Vertcal Duct	150 CFM	20 FEET
D1036-I_-WF (NFPA101)	36"	Exterior Wall Fan	Vertcal Duct	**550 CFM**	20 FEET
Volts = 115 :: Hz = 60 Amps :: Light Bulb = 60A15/TF :: Elec. Cutoff = 50A-208VAC Relay :: Gas Cutoff = 110VAC Solenoid					

C. Hood system include commercial-grade grease extractor type, high efficiency cartridge style baffle filters of adequate number and sizes to ensure optimum performance in accordance with manufacturer's published information. The filter housing shall terminate in a pitched, full-length grease trough, which shall drain into a removable grease container.

D. Shatter proof light fixtures shall be included in the hood system. Wiring shall conform to the requirements of the National Electrical Code (NEC #70).

1. Pre-Installed Fire protection system to provide duct entry, plenum, and surface protection for hood system and equipment located below ventilator.
2. System interconnected with included shunt trip breaker and/or gas solenoid valve of equipment located below ventilator for power and fuel shutoff during system actuation.

E. Environmental Monitoring / Internal Monitoring / Pre-Suppression

1. This system starts with a set of heat sensors just within the face of the hood; one at a medium set point, the other at high. Under cooking conditions, when the medium set point is reached, the fan is turned on high. This feature dissipates the heat from the area but also draws it into the unit, past the fusible links in the system. If temperatures continue to rise and the high temperature set point is reached, the system reacts by shutting down power to the range *prior to suppression system release*. When this occurs, the unit's internal alarm is activated so that occupants are notified that the

system is working to prevent further escalation of a potential fire. This is considered two stages of Pre-Suppression, where the unit is interacting with the cooking environment - working to minimize the risk of a fire event

Should temperatures continue to rise, fire is present. The fusible links will melt, mechanically actuating the suppression system and releasing a low PH wet chemical agent across the cook-top. At actuation, the system will also make a second attempt to shut down power to the range; in the event of a flash-fire, or something that happens too quickly to register with the temperature sensors. The system will continue to sound its internal alarm while also communicating a "fire code" back to a monitored alarm panel.

The PLC Self-Monitoring-System also monitors the entire suppression assembly for completeness and continuity. If the suppression system is ever compromised through a loss of pressure or broken connection, or tampering of any kind, the unit reacts by shutting down power to the range. In this case the suppression system is compromised therefore the range shouldn't be in use. Under this condition, the system communicates a separate "maintenance code" saying that the unit is down and needs service. When preemptive shutdown occurs, the system and the cooking equipment will not come back on-line until the D-1000 is reset

F. Options

1. Manual Pull Station (MPK) – Mechanical assembly allowing the fire suppression system to be actuated manually, normally located at the point of egress.
2. The CLOCKBOX (CLBX)– Cooking Element Time-Out System allowing for separate control functionality over when the appliance is used.
3. NSF (NSF) – The hood system can be upgraded to the NSF Standard
4. NFPA101 Upgrade (NFPA101) – Combines MPK, CLBX and an upgraded fan to deliver >500cfm in order to comply with the requirements of The NFPA Life Safety Code

G. Exhaust Ventilator System Requirements:

SYMBOL	Description	Type
K1301	Ventilator	Single sided-Wall
K1302	Ventilator	Single sided-Island
K1303	Ventilator	Dual sided
K1304	Fire-protection system with remote, wall-mounted pull station(s) located near door(s)	-

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install hood system level and plumb with access clearances required for operation, maintenance and cleaning and in accordance with the manufacturer's published documentation.

B. Coordinate installation of ventilators with overhead supports; see Section 05 50 00, METAL FABRICATIONS.

C. Interconnect ventilators to service utilities.

3.2 FIELD TESTING

A. Functional Test: using manufacturer-supplied procedure, short internal sensors to demonstrate shutdown and communication features.

B. Puff Test: using manufacturer supplied test cylinder, replace suppressant cylinder in system with test (nitrogen only) cylinder. Replace fusible links in line with a "test link". Cut the test link and allow the system to actuate, performing all of its standard functions.

3.3 CLEAN-UP

A. At completion of the installation, clean and adjust equipment as required to produce ready-for-use condition.

B. Where stainless-steel surfaces are damaged during installation procedures, repair finishes to match adjoining undamaged surfaces.

3.4 INSTRUCTIONS

A. Instruct personnel and transmit operating instructions in accordance with requirements.

END OF SECTION 23 38 13