PROJECT MANUAL

Volume 1

Renovations to the Criminal Justice Center Phases I, II & III
201 Poplar Avenue
Memphis, TN 38103

for

Shelby County Government
160 North Main Street
Memphis, TN 38103

Sealed Bid #1000492

Architect’s Project 21618
August 15, 2017
Issued for Bidding December 22, 2017
Architects:
Evans Taylor Foster Childress Architects, P.C.
343 North Main Street
Memphis, Tennessee 38103
Phone: (901) 525-5344
Fax: (901) 525-5420

Structural Consultant:
Chad Stewart & Associates, Inc.
9700 Village Circle, Suite 300
Lakeland, Tennessee 38002
Phone: (901) 260-7850
Fax: (901) 260-7853

Mechanical, Plumbing, Fire Protection and Electrical Consultant:
OGCB, Inc.
3485 Poplar Avenue, Suite 200
Memphis, Tennessee 38111
Phone: (901) 452-6283
Fax: (901) 458-8640

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1.01 INVESTIGATION OF EXISTING BUILDING BY BIDDERS:

A. Contract Drawings indicate certain existing building conditions and the proposed new construction. All Bidders are urged to review the existing building along with all Contract Documents, prior to bidding, to ascertain the existing and new conditions under which they will be required to complete their work under this Contract.

B. The Owner and Architect disclaim any responsibility for the interpretation, investigation, or accuracy of any on-site evaluations by the Bidder. Bidder is solely responsible for verifying all existing data, conditions, and/or work required to complete all work, in full, as required by his contract.

C. The Contractor is urged to verify all existing conditions prior to actually beginning his work to be certain that conditions shown as existing do actually exist. If inconsistencies are noted, the Architect is to be notified in writing immediately for resolution with the Owner and others prior to beginning work. Claims for delays in this regard will not be entertained by the Owner. Execution of work constitutes acceptance of existing conditions by the Contractor.

1.02 BIDDER’S RESPONSIBILITY

A. Bidders are urged to make their own investigation of the existing facility before bidding. Bidder is solely responsible for verifying all existing data, conditions, and/or work required to complete all work, in full, as required by their Contract.

B. The Owner and Architect disclaim any responsibility for the interpretation or investigation of any Documents on on-site evaluations referenced above by the Bidder. The Bidder, by submittal of his Bid, acknowledges that he is solely responsible for verifying all existing data, conditions, and/or work required to complete all work in full as required by his Contract and he has investigated all buildings, drawings and data to his satisfaction. Claims to the contrary will not be entertained by the Owner after bids are received.

1.03 SHELBY COUNTY CRIMINAL JUSTICE CENTER SECURITY CONSIDERATIONS

A. The Contractor is hereby notified that this project is to be constructed under the Security Requirements of Shelby County Government. Workers will be restricted to the site of this work and will be identified by security badges issued by Shelby County. Workers will not be permitted to enter areas not previously approved by Shelby County. Rules and regulations will be issued by Shelby County and the Contractor fully agrees to adhere to such rules and to require all subcontractors, material suppliers, and/or vendors to abide by such rules as if same were written herein and/or within their contracts.

END OF SECTION
The following Shelby County Contracting Forms and Supplements are hereby made a part of these specifications, and is bound herein as the remainder of Section 00 5200.

- Request for Quotation
- Notice to Bidders
- General Terms & Conditions
- Detailed Requirements/Specifications
- Locally Owned Small Business (LOSB) and Minority and Woman Business Enterprises (M/WBE) Purchasing Programs
- Drug-Free Workplace Affidavit
- Gratuity Disclosure Form
- Quotation/Bid Response Form
- Bid Bond
- Performance Bond
- Labor and Material Payment Bond
- Owner/Contractor Agreement

END OF SECTION
REQUEST FOR QUOTATION

BID DESCRIPTION: RENOVATIONS TO THE CRIMINAL JUSTICE CENTER – PHASES I, II & III.

COMMODITY: 910-65 REMODELING AND ALTERATIONS (Code No. and Description)

BID NUMBER: SEALED BID I000492 (Sealed Bid or Regular Bid)

DUE DATE: NO LATER THAN 2:00 PM TUESDAY 2/6/18 (TIME) (DAY) (DATE)

☑ ORIGINAL SPECIFICATIONS ☐ (REVISED) SPECIFICATIONS

160 NORTH MAIN STREET, MEMPHIS, TENNESSEE 38103
SECTION I
NOTICE TO BIDDERS
Shelby County Government has issued **Sealed Bid Number I000492**, for **Renovations to the Criminal Justice Center, Phases I, II, & III**. Information regarding this bid is located on the County’s website at [www.shelbycountytn.gov](http://www.shelbycountytn.gov). At the top of the home page, click on the links “Department”, “P” for the Purchasing Department and “Bids” to locate the name of the above-described Seal Bid.

You will note that your bid is due no later than **2:00 PM, Tuesday, February 6, 2018**, in the office of the Administrator of Purchasing, 160 North Main Street, Suite 900, Memphis, TN 38103.

All bids will be opened and publicly read by the Shelby County Government, at the time mentioned above, in the Purchasing Department, Suite 900, 160 North Main Street, Memphis, TN 38103.

A consideration in determining the best low bid will be the bidder’s local presence or ownership within Shelby County.

Please refer to pages 12 & 13 for Mandatory Pre-Bid Meeting information and Minimal Requirements.

THE LABEL, WHICH IS ATTACHED TO THIS BID NOTIFICATION, SHALL BE COMPLETELY FILLED OUT AND ATTACHED TO THE BID SUBMISSION ENVELOPE. YOU MUST DISPLAY YOUR CURRENT E.O.C. ELIGIBILITY NUMBER ON THE OUTSIDE OF YOUR ENVELOPE. UNLESS THE LABEL IS COMPLETELY FILLED OUT AND YOUR CURRENT CERTIFICATION NUMBER OR ELIGIBILITY NUMBER IS NOTED THEREON, YOUR BID WILL BE RETURNED TO YOU UNOPENED. IF YOUR LABEL IS LOST OR MISPLACED, PLEASE NOTE THE APPROPRIATE INFORMATION IN THE LOWER LEFT-HAND CORNER OF YOUR ENVELOPE.

Shelby County Government reserves the right to reject any or all bids and to waive any informality therein.

If there are any questions on the above bid, please contact Sonja Worthy in the Purchasing Department at (901) 222-2250.

Sincerely,

Signed Original on File

Sylvie Le Bouthillier, Administrator of Purchasing

SECTION I NOTICE TO BIDDER(S)
SECTION II GENERAL TERMS & CONDITIONS
SECTION III DETAILED REQUIREMENTS/SPECIFICATIONS
SECTION IV QUOTATION/BID RESPONSE FORM
SECTION II
GENERAL TERMS & CONDITIONS
1.0 PREPARATION AND SUBMISSION OF BIDS:

1.1 All information requested of the vendor shall be entered in the appropriate space on the Bid Response Forms. Failure to do so may disqualify the bid.

1.2 All information shall be entered in ink or typewritten. Mistakes may be crossed out and corrections inserted before submission of a bid. Corrections shall be initialed in ink by the person signing the bid.

1.3 Corrections or modifications received after the closing time specified in the bid will not be accepted.

1.4 The vendor must provide its Federal Identification Number. Failure to provide this number could result in a 20% withholding of payment for any orders placed against this bid.

1.5 All bids shall be signed by an authorized officer or employee of the bidder.

1.6 Bids must be submitted by the date and at or prior to the time specified to be considered. No late bids, telegraphic or telephone bids will be accepted.

1.7 As a condition precedent to bidding, bidders shall have received a current "Shelby County Equal Opportunity Compliance Eligibility Number" which must be shown on the outside of each bid envelope submitted.

1.8 Submit bids in a sealed envelope with (1) your company’s name and address, (2) the sealed bid number, (3) the closing time and due date of the bid, and (4) your company’s current E.O.C. Eligibility Number shown on the outside.

1.9 The Bid Response Forms must be completed in full for a bid to be considered for award. Bidders are encouraged to submit additional information which they feel might be useful to the County in evaluating bids; however, the County reserves the right to reject or accept for consideration, during evaluation of bids, and additional information the bidder submits, and may reject or accept minor variations when evaluating bids.

2.0 CRITERIA AND CONDITIONS OF AWARD:

2.1 The County reserves the right to: (1) award bids received on the basis of individual items, or groups of items, or on the entire list of items; (2) reject any or all bids, or any part thereof, (3) waive any informality in the bids, and (4) accept the bid that is in the best interest of the County. The Purchasing Administrator's decision shall be final.

2.2 If the vendor cannot accept an award of only some items included in its bid, the vendor must stipulate in writing an exception to the award of individual items by stating “All or None” in the bid.

2.3 An award may be made based on the following factors:

- 2.3.1 Best/Low Bid meeting specifications;
- 2.3.2 Previous Vendor Performance History;
- 2.3.3 Delivery Time Quoted;
- 2.3.4 Vendor’s local presence or ownership in Shelby County.

2.4 Shelby County Government reserves the right to alter, amend, or modify any provisions of the bid, or to withdraw this bid, at any time prior to the award of a contract pursuant hereto.

3.0 SPECIFICATIONS:

3.1 These specifications are not intentionally written for any one manufacturer and are for the purpose of indicating general size, type, and description of the items needed.

3.2 Any responsible bidder who considers these specifications to be of a non-competitive nature should immediately contact the Purchasing Administrator.

3.3 The Administrator of Purchasing hereby reserves the right to approve as an equal, or to reject as not being equal, any item the bidder proposes to furnish which contains minor variations from specification requirements but may comply substantially therewith. Items exceeding specifications will be considered as meeting specifications.

3.4 The bidder shall abide by and comply with the true intent of the specifications and not take advantage of any unintentional error or omission, but shall fully complete every part as the true intent and meaning of the specifications.

3.5 Changes to the bid specifications are not valid unless authorized in writing by the Shelby County Purchasing Department.

4.0 PRICING, TERMS & DELIVERY:

4.1 Prompt payment discounts shall be considered in the evaluation of bids. Prices will be considered as net if no cash discount is shown.

4.2 Shelby County Government reserves the right to accept any prompt payment discount offered by the
successful bidder; however, for purposes of the discount, the due date will be computed from the date of receipt of a properly and correctly submitted invoice, receipt of shipment, or acceptance of shipment, whichever is later to occur.

4.3 Time of delivery may be a consideration in the award of this bid.

4.4 Time of delivery shall be stated as the number of calendar days from receipt of the order by the vendor to receipt of the goods or services by the County.

4.5 All deliveries shall be F.O.B. inside or at the Shelby County Department location specified in the bid. No additional charges for delivery shall be allowed.

5.0 LIABILITIES:

5.1 The vendor shall hold the County, its elected officials, agents, servants, and employees harmless from liability of any nature or kind because of use of any copyrighted, or uncopyrighted composition, secret process, patented or unpatented invention incorporated into any item provided to the County pursuant to this bid, and agrees to defend, at its own expense, any and all action brought against the County because of the unauthorized use of such items.

5.2 Shelby County Government, as a subdivision of the State Of Tennessee, cannot indemnify or hold harmless any vendor, supplier, contractor, etc. against claims of a third party or parties.

6.0 GRATUITIES:

6.1 Shelby County Government may, by written notice to the bidder, cancel any contract purchase order resulting from the bid without liability if it is determined by the County that gratuities, in the form of entertainment, gifts, or otherwise, were offered or given by, the bidder, or any agent or representative of the bidder, to any official or employee of the County with the intent of securing a contract, or securing favorable treatment with respect to such a contract. In the event the contract purchase order is cancelled by the County pursuant to this provision, the County shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the cost incurred by the bidder in providing such gratuities.

7.0 CONFLICT OF INTEREST:

7.1 No part of the total contract purchase order amount resulting from this bid shall be paid directly or indirectly to any official or employee of Shelby County Government as wages, compensation, or gifts in exchange for acting as official agent, employee, subcontractor, or consultant to the contractor in connection with any work contemplated or performed relative to this contract. Furthermore, bids submitted by Shelby County employees or elected officials will not be accepted.

8.0 SAMPLES:

8.1 Samples of articles, when required, shall be furnished free of cost to the County.

8.2 Samples of articles submitted may be retained for future comparison.

8.3 Samples which are not destroyed by testing, or which are not retained for future comparison, will be returned upon request at the vendor's expense.

9.0 TAXES:

9.1 The vendor should include in its bid price to the County all applicable taxes it will incur for supplying the goods or services to the County that are payable by the County. However, the vendor shall not include any sales, use or federal excise tax to be collected from the County since the County is tax exempt from such taxes.

9.2 Items purchased for resale will show the County's resale permit number on the purchase order.

9.3 Exemption certificates will be furnished upon request.

10.0 BRAND NAMES:

10.1 Brand names and numbers, when used, are for reference to indicate the character or quality desired.

10.2 "Or Equal" items will be considered, provided the vendor clearly describes the substitute item, including the brand name, part number, and level of quality of the substitute item(s). The determination of the Purchasing Administrator to accept or reject the substitute item(s) shall be final and conclusive.

10.3 When no substitution is specified by the bidder, the vendor’s bid
is presumed to conform to the items specified in the bid.

10.4 BID PROPOSALS BASED ON ITEMS OTHER THAN THOSE SPECIFIED BY BRAND NAMES IN THE BID: Any items other than those brands specified in the bid specifications require approval of the Purchasing Administrator. The items offered must be equivalent as to function, basic design, type and quality of materials, method of construction and any required dimensions.

11.0 DEFAULT BY BIDDER:

11.1 In case of default by the bidder, the County may procure the articles or services from other sources and may deduct from any monies due or that may thereafter become due to the vendor, the difference between the price named in the contract or purchase order and actual cost thereof to the County. Prices paid by the County shall be considered the prevailing market price at the time such purchase is made. Periods of performance may be extended if the facts as to the cause of delay justify such extension in the opinion of the Purchasing Administrator.

12.0 CONTRACTS, LEASES, LEASE-PURCHASE:

12.1 When required, contracts or leases must be approved by the Shelby County Contracts Administration Department.

12.2 Shelby County Government will not accept language in any contract that limits or attempts to limit liability for breach of contract or negligence by the vendor.

13.0 BID BONDS AND INSURANCE:

13.1 When required, Bid Bonds may be submitted in the form of a Bid Bond or a Cashier’s Check in the amount required. When a Cashier’s Check is submitted in lieu of a Bond, and the bidder is one of the three (3) low bidders, the check may be retained until a contract is signed with the successful bidder.

13.2 When required, bidders must supply certificates of insurance or bonds through a company that is authorized to do business in the State of Tennessee, and such insurance or bond is subject to final approval by the Shelby County Risk Management Department.

13.3 Bid Bonds submitted by unsuccessful vendors will be returned upon award of contract [Tenn. Code Ann. §§12-3-203 (j)].

14.0 FIRM PRICES:

14.1 Unless otherwise required in Section III of the bid, all prices quoted will be firm for a minimum of thirty (30) days from the bid opening date.

15.0 COUNTY COMMISSION APPROVAL:

15.1 If the award of this bid exceeds $50,000, or involves a Capital Improvement Project (C.I.P.), as defined by the County, such award will require approval by the Shelby County Board of Commissioners. This procedure could delay an award for a period of 30 to 60 days, or more, after the bid opening date.

16.0 THIRD PARTY ASSIGNMENT:

16.1 There shall be no assignments whatsoever to third parties, financial or otherwise, unless expressly agreed to by Shelby County Government in a separate written agreement. Any assignment or attempted assignment of any nature to third parties, without the consent of the County, shall cause the termination of the contract at the option of the County.

17.0 AUTHORITY TO AWARD BID:

17.1 The award of this bid to the successful bidder(s) shall be governed by the laws of the State of Tennessee. The County will obtain all appropriate authority to award the bid and to enter into a contract.

18.0 LATE DELIVERY:

18.1 The vendor shall not be responsible for failure to deliver materials or render services due to strikes, flood, or fire.

18.2 Shelby County Government has the authority to cancel any and all orders issued under this bid if the vendor fails to deliver timely.

19.0 LIEN, CLAIMS OR ENCUMBRANCE:

19.1 The vendor agrees that all goods and materials delivered pursuant to this bid shall be free of any lien, claim or encumbrance.

20.0 AUDIT AND INSPECTION OF PREMISES:

20.1 All bidders, by bidding, agree that an official of the Purchasing Department shall be allowed to inspect the bidder's premises to verify its qualifications as a bidder.
20.2 The successful bidder shall agree to audits by an official of the Purchasing Department or the County’s Internal Audit Department if, during the period of the contract or bid award, such an audit is deemed necessary.

21.0 DOCUMENTS INCLUDED IN CONTRACT:

21.1 The specifications, terms and conditions, and detailed requirements contained in this bid shall be incorporated into and become a part of any contract or purchase order that results from this bid.

22.0 INSPECTION:

22.1 All shipments are subject to inspection prior to acceptance. If an inspection reveals that the delivered item(s) do not meet the bid specifications, Shelby County has the right to cancel the order and return said item(s) to the vendor at the vendor’s expense.

23.0 MATERIAL SAFETY DATA SHEETS:

23.1 As a condition to bid award, if item(s) contained in this bid require Material Safety Data Sheets, the successful bidder shall provide data sheets at the time of delivery.

24.0 LICENSE:

24.1 All appropriate Licenses and Certifications required in the State of Tennessee to provide the goods and/or perform the Services required, procure all permits, pay all charges, taxes and fees – please list each of them, as well as their respective numbers and expiration date.

25.0 PURCHASES BY MUNICIPALITIES AND OTHER GOVERNMENTAL AGENCIES/ENTITIES:

25.1 On bids issued to establish a source of supply for estimated requirements for Shelby County Government, bidders are requested to indicate in their bid responses whether they will allow purchases by other municipalities or governmental agencies or entities within the boundaries of Shelby County, Tennessee at the offered prices offered to Shelby County. The decision to do so shall be at the option of the bidder.

25.2 Purchases by local municipalities or other governmental agencies or entities shall be at the option of such municipalities, agencies, or entities.

26.0 PURCHASES FROM STATE OF TENNESSEE CONTRACT:

26.1 Shelby County Government reserves the right to purchase item(s) specified in this bid pursuant to the State of Tennessee Statewide Contracts, or the contracts of any other governmental agencies if it is considered in the best interest of Shelby County Government. Purchases from these contracts are authorized by Shelby County Code, Sec, 2-57 (10) (B).

27.0 DISCLOSURE OF CONFIDENTIAL OR PROPRIETARY INFORMATION:

27.1 Bidders are advised that T.C.A 10-7-503(a) mandates that all State, County and Municipal records shall, at all times during business hours, be available for personal inspection by any citizen of Tennessee. Any information that is submitted by the vendor, whether or not identified in a bid response as proprietary or confidential, is therefore subject to inspection, and Shelby County assumes no liability for any information disclosed pursuant to a request under T.C.A 10-7-503(a).

28.0 TERMINATION OF AWARD OR CONTRACT:

28.1 It shall be cause for the immediate termination of any award or contract that may be entered into as a result of this bid if, after award or contract execution, the County determines that either the vendor or any of its principals, partners or corporate officers, if a corporation, including the corporation itself, has plead nolo contender, or has plead or been found guilty of a criminal violation, whether state or federal, involving governmental sales or purchases, including, but not limited to, rigging of bids, price fixing, or any other collusive and illegal activity pertaining to bidding and governmental contracting.

29.0 NON-DISCRIMINATION – TITLE VI:

29.1 The vendor agrees to comply with the provisions of Title VI of the Civil Rights Act of 1964 and all other Federal statutory laws which provide, in whole or in part, that no person on the grounds of handicap, age, race, color, sex, or national origin,
shall be excluded from participation in, or be denied benefits of, or be otherwise subject to discrimination under any program or activity receiving Federal financial assistance during the performance of a contract or purchase order. The vendor shall upon request show proof of such non-discrimination, and shall post in conspicuous places available to all employees and applicants notices of non-discrimination.

30.0 NON-DISCRIMINATION - TITLE VII:

30.1 The vendor agrees to comply with the provisions of Title VII of the Civil Rights Act of 1964 and all other Federal statutory laws which provide, in whole or in part, that no employee on the grounds of age, race, color, sex or national origin, shall be discriminated against, harassed or retaliated against while opposing illegal harassment or discrimination in the workplace. The vendor shall, upon request, show proof of such non-discrimination, and shall post in conspicuous places available to all employees and applicants notices of non-discrimination.

31.0 NON-DISCRIMINATION - TITLE II:

31.1 The vendor agrees to comply with the provisions of Title II, which prohibits discrimination on the basis of disability by public entities. All governmental activities of public entities are covered, even if they are carried out by a vendor. The vendor shall, upon request, show proof of such non-discrimination, and shall post in conspicuous places available to all employees and applicants notices of non-discrimination.

32.0 EMPLOYMENT ELIGIBILITY VERIFICATION:

32.1 The Immigration and Naturalization Service's regulations require all employers to complete Forms I-9 as evidence of verification of identity and employment eligibility of each employee hired after November 6, 1986. The vendor, by submission of its bid, acknowledges that it is in compliance with said regulations and shall upon request show proof of same.

33.0 LOCALLY OWNED SMALL BUSINESS (LOSB) AND MINORITY AND WOMAN OWNED BUSINESS ENTERPRISES (M/WBE) PURCHASING PROGRAMS RULES AND REGULATIONS
SECTION III
DETAILED REQUIREMENTS/SPECIFICATIONS
Section III  Detailed Requirements / Scope of Work / Specifications

1. REQUIREMENTS TO BE “RESPONSIVE”
2. BONDS / LICENSES / INSURANCES
3. WARRANTIES
4. LITERATURE / MANUALS / PUBLICATIONS
5. STANDARDS
6. SPECIFICATIONS / SCOPE
7. DEMONSTRATION OF GOODS/SERVICES
8. EQUAL / EQUIVALENT PRODUCTS
9. DEVIATION TO SPECIFICATIONS
10. SPECIAL PACKAGING
11. DELIVERIES / F.O.B. POINT
12. LOCATIONS
13. RIGHTS OF INSPECTION AND/OR SAMPLING
14. FIRM PRICES / DISCOUNTS / QUANTITIES / RENEWALS
15. PAYMENT SCHEDULE
16. AWARDS
17. CONTRACT / AWARD LETTER / CANCELLATION
18. ORDERS
19. ADDITIONAL INFORMATION FROM THE BIDDER
20. LOSB and M/WBE
21. QUESTIONS / INQUIRIES
IMPORTANT NOTES:

MANDATORY PRE-BID MEETING - A mandatory pre-proposal meeting to address questions will be held on Tuesday, January 16, 2018 at 9:30 a.m.(CST) at the Criminal Justice Center Auditorium located at 201 Poplar Avenue, 1st Floor, Memphis, TN, 38103. All interested respondents are required to participate in this meeting.

Local vendors are required to attend in person. Non-local vendors can access the meeting via conference call by emailing the Purchasing Buyer to obtain the access codes. Local Vendors unable to attend the meeting in person due to unforeseen circumstances must contact the Buyer immediately to obtain the access codes. Failure to attend this meeting in person (or via conference call) will result in the rejection of your bid, i.e. considered as non-responsive.

MANDATORY INFORMATION and FORMS – To properly respond and prepare your proposal response, please make sure you pay close attention to all mandatory information/formes requested, including sign and attach all forms listed in Section 1. This bid clearly documents and outlines the format and what information is required at the time of proposal submission (vs later, only for the successful vendor(s)).

LOSB & M/WBE – Refer to Section IV. H, where 2nd and 3rd pages will give you the goals & preferences information for this specific bid. For additional details, please refer to below ordinances on our website.
Link: [http://www.shelbycountyttn.gov/189/Purchasing](http://www.shelbycountyttn.gov/189/Purchasing)

- LOCALLY OWNED SMALL BUSINESS (LOSB) PROGRAM ORDINANCES 471 & 474
- MINORITY AND WOMAN BUSINESS (M/WBE) PROGRAM ORDINANCE 472 & Amendment, and ORDINANCE 473

Sincerely,

Signed Original on File

Sonja Worthy, Buyer
Shelby County Government
Purchasing Department
REQUIREMENTS TO BE “RESPONSIVE”

Shelby County Government, (the “County”), is soliciting proposals from interested and qualified Vendors to provide Renovations to the Criminal Justice Center Phases I, II, & III (the “Goods and/or Services”). This Sealed Bid is being released to invite interested and qualified Vendors to prepare and submit proposals in accordance with instructions provided where the successful proposal(s) will be selected and invited to enter into a contractual relationship with Shelby County for the Goods and/or Services outlined in this sealed bid, and per proposal(s) received.

In this Sealed Bid, the terms Proposer, Vendor, Bidder, Consultant, Contractor, Professional are used interchangeably unless the context indicates otherwise.

All specifications are part of this bid and general terms and conditions (as outlined in the Terms of this bid). They shall become a part of and be included in any contract/purchase order/systems contract resulting from any award.

These specifications are not intentionally written to favor any one manufacturer or service provider, and are only for the purpose of indicating generally the type of work required of said bid. Any responsible Bidder who considers these specifications to be of a non-competitive nature should immediately contact the Administrator of Purchasing.

In order to be considered as “responsive”, all Proposers must answer and provide justifications for ALL below minimal requirements (unless specifically marked for “LATER”):

1. All appropriate Licenses and Certifications required in the State of Tennessee to provide the goods and/or perform the Services required, procure all permits, pay all charges, taxes and fees – please list each of them, as well as their respective numbers and expiration dates.
2. Active Equal Opportunity Compliance (EOC) number(s); or your application is “in” the EOC system for processing (refer to details outlined below) – please list all your Shelby County EOC active numbers.
3. FORMS - Locally Owned Small Business (LOSB) and Minority/Woman Business Enterprises (M/WBE) - both FORMs B must be completed with active Shelby County LOSBs/MWBEs, signed and included with your proposal, as detailed in this document. FORM(s) A to be completed/signed, with applicable backup, as well only IF 2 goal(s) is(are) not met on Form(s) B.
4. FORM - Drug Free Workplace Affidavit must be completed, signed and submitted with your bid/proposal – even if less than 5 employees.
5. Quotation/Bid Response Form must be completed/signed (with applicable backup if applicable) and included with your bid, as detailed in this document & Section IV.
6. Bid Bond: All proposals must be accompanied by a Bank Certified Check or Bank Draft, Letter of Credit issued by any national bank or approved Bid Bond for not less than five percent (5%) of the amount of the project. All proposal guarantees shall be made out to the County of Shelby.
7. LATER, only for the successful vendor(s) during contract negotiations – Minimum insurance requirements – Insurance proof for each type/amount of insurance requested, as detailed in Section X.B.
8. LATER, only for the successful vendor(s) during contract negotiations – Active Vendor number.

9. LATER, only for the successful vendor(s) during contract negotiations – FORM - Gratuity Disclosure Form must be completed, signed and submitted.

10. LATER, only for the successful vendor(s), after the award:
   o Both LOSB and MWBE forms C must be completed/signed, and submitted by each LOSB and/or MWBE providing sub-contracted goods and services, certifying that they are performing the work and that it is a commercially useful function.
   o Both LOSB and MWBE forms D must be completed/signed, and submitted each month certifying all payments made to LOSB and/or MWBE sub(s).

WITHIN A REASONABLE PERIOD FROM THE TIME OF RECEIVING THE AWARD LETTER(s), THE SUCCESSFUL VENDOR(s) MUST PRODUCE ALL ABOVE MINIMAL REQUIREMENTS LABELED AS “LATER” TO THE SHELBY COUNTY REQUESTING DEPARTMENT. FAILURE TO DO SO SHALL RESULT IN THE AWARD BEING RESCINDED.

Shelby County EOC and Vendor numbers:

As a part of doing business with Shelby County, each individual, company or organization is required to have active EOC and Vendor numbers before starting providing goods/services to SCG:

1. obtain a SCG “Equal Opportunity Compliance” certification number (acquired through the EOC Department, partially online then bring/mail/fax),
   AND
2. obtain a SCG Vendor number (acquired through the Purchasing Department, online only), as explained below:

1. To obtain an **EOC number** (as well as LOSB/MWBE numbers, if applicable):
   Please print the packet and **bring/mail/fax** the completed packet to the EOC office. Should any further assistance be needed, contact the EOC office directly (not Purchasing). EOC office hours are from 8:00 a.m. to 4:30 p.m. Monday through Friday and we welcome your visits.

   Shelby County Government
   160 N. Main
   2nd Floor – Equal Opportunity Compliance (EOC)
   Memphis, TN 38103
   Reception: 901-222-1100
   Fax: 901-222-1101

   If your company (or your sub(s)) does **NOT** have an ACTIVE EOC number at the time of the bid, please ensure EOC has your (or their(s)) application or renewal “in” their system at the time of the bid, for their processing (assuming successful). Because of the length of time required to receive an EOC number, proposals from vendors who **submit** an application **prior** to the bid due date will be accepted, pending EOC approval of their application.
2. To obtain a **Vendor number**:
   Link: [https://forms.shelbycountytn.gov/lfserver/vendorapplication](https://forms.shelbycountytn.gov/lfserver/vendorapplication)
   Complete the application and submit **online only**.
   You will then be emailed a W-9 form in which you are to print, sign and date.
   The original signed and dated copy is needed on file in our office.
   You have the option to mail the W-9 or walk it in.
   A faxed or scanned copy cannot be accepted.
   The copy of the application that you receive via email is yours to keep on file.
   *NOTE: upon receiving the EOC number, Purchasing will create your Vendor number and you will receive it via email.*
   Should any further assistance be needed, contact the Purchasing office directly (not EOC).
   A vendor kiosk is available for public use. Purchasing office hours are from 8:00 a.m. to 4:30 p.m. Monday through Friday and we welcome your visits.
   Shelby County Government
   160 N. Main
   **9th Floor – Purchasing Department**
   Memphis, TN 38103
   901-222-2250

   Because an EOC number is required to receive a Vendor number, the successful Vendor(s) will have to get an active Vendor number before contract signature and start providing the goods/services to SCG, i.e not required at the time of proposal submission.

2. **BONDS / LICENSES / INSURANCES**

   **Bid Bond(s):**
   All bids must be accompanied by a Bank Certified Check or Bank Draft, Letter of Credit issued by any national bank or approved Bid Bond for not less than five percent (5%) of the amount of the bid. All bid guarantees shall be made out to the County of Shelby.

   **License(s), Classification(s) and Certification(s):**
   Have all appropriate Licenses and Certifications required in the State of Tennessee to perform the Goods/Services required and procure all permits, pay all charges, taxes and fees – please identify clearly on your envelope, but not limited to:
   - Contractor license/classifications/certification number – as well as the expiration date.
   - All appropriate electrical, plumbing,… license/classifications/certification number(s) for that type of work also provided by the Prime, when/if applicable – as well as the expiration date(s).
   - List all Sub-contractors, and for each: all appropriate electrical, plumbing,… license/classifications/certification number(s) for the type of work they will provide, as your sub-contractor(s), when/if applicable – as well as the expiration date(s).
Insurance(s):

1. Responsibilities For Claims And Liabilities. (a) The Vendor shall indemnify, defend, save and hold harmless the County, and its elected officials, officers, employees, agents, assigns, and instrumentalities from and against any and all claims, liability, losses or damages—including but not limited to Title VII and 42 USC 1983 prohibited acts—arising out of or resulting from any conduct; whether actions or omissions; whether intentional, unintentional, or negligent; whether legal or illegal; or otherwise that occur in connection with or in breach of this Contract or in the performance of the duties hereunder, whether performed by the Vendor its sub-Vendors, agents, employees or assigns. This indemnification shall survive the termination or conclusion of this Contract.

(b) The Vendor expressly understands and agrees that any insurance protection required by this Contract or otherwise provided by the Vendor shall in no way limit the responsibility to indemnify, defend, save and hold harmless the County or its elected officials, officers, employees, agents, assigns, and instrumentalities as herein provided.

(c) The County has no obligation to provide legal counsel or defense to the Vendor or its sub-Vendors in the event that a suit, claim or action of any character is brought by any person not party to this Contract against the Vendor as a result of or relating to obligations under this Contract.

(d) Except as expressly provided herein, the County has no obligation for the payment of any judgment or the settlement of any claims against the Vendor as a result of or relating to obligations under this Contract.

(e) The Vendor shall immediately notify the County, c/o Shelby County Government, Contracts Administration, 160 N. Main Street, 9th Floor, Suite 950, Memphis, TN 38103, of any claim or suit made or filed against the Vendor or its sub-Vendors regarding any matter resulting from or relating to the Vendor’s obligations under this Contract and will cooperate, assist and consult with the County in the defense or investigation thereof.

(f) The Vendor shall immediately notify Shelby County Government, Contracts Administration, 160 N. Main Street, 9th Floor, Suite 950, Memphis, TN 38103, of cancellation or changes in any of the insurance coverage required.

2. Insurance Requirements. The Vendor shall purchase and maintain, in a company or companies authorized to do business in the State of Tennessee, such insurance as will protect the County from claims which may arise out of or result from the Vendor’s operations under the Contract, whether such operations are performed by himself or by any subVendors or by anyone directly or indirectly employed by any of them, or by anyone for whose acts the Vendor or subVendor may be liable.
The insurance required shall be written for not less than any limits of liability specified below or required by law, whichever is greater. The Vendor will maintain throughout the life of this Contract insurance, through insurers rated A- or better by A. M. BEST, in the following minimum requirements:

1) **Commercial General Liability Insurance** – Limit of not less than $1,000,000 limit per occurrence bodily injury and property damage/$1,000,000 personal and advertising injury/$2,000,000 General Aggregate/$2,000,000 Products-Completed Operations Aggregate. Shelby County Government, its elected officials, appointees, employees and members of boards, agencies, and commissions shall be named as additional insureds. The insurance shall include coverage for the following:
   a) Premises/Operations
   b) Products/Completed Operations
   c) Contractual Liability
   d) Independent Vendors/Contractors
   e) Personal Injury Liability
   f) Broad Form Property Damage
   g) XCU coverage, where applicable

2) **Business Automobile Liability Insurance** – Limit of not less than $1,000,000 per occurrence for property damage and bodily injury. Shelby County Government, its elected officials, appointees, employees and members of boards, agencies, and commissions shall be named as additional insured. Coverage is to be provided on all:
   a) Owned/Leased Autos
   b) Non-owned Autos
   c) Hired Autos

3) **Workers Compensation and Employers’ Liability Insurance** – Including coverage for sole proprietors, partners, and officers, regardless of requirement by Tennessee State Statute. Policy is to be specifically endorsed to include these individuals for coverage. This policy should include Employers’ Liability Coverage for $1,000,000 per accident. The Vendor waives its right of subrogation against Shelby County for any and all workers’ compensation claims.

4) **Professional Liability Errors & Omissions Insurance** – Coverage with minimum limits of $1,000,000 per claim or occurrence/$3,000,000 annual aggregate indicating if coverage is written on claims-made basis.

6) **ONLY FOR BIDS OVER $5,000,000:**
   - Umbrella - $2,000,000 per occurrence.
   - Builders Risk Insurance or Installation Floater- (as applicable) - This covers building structures and personal property, vandalism, malicious mischief and all risks associated with the construction project. Consult Insurance Specialist.
3. Warranties

The Bidder must warrant that the goods/services listed in this bid will conform to applicable specifications, instructions and samples, will be merchantable, of good material and workmanship, free from defects, and will be fit and sufficient for the purpose intended. Payment for, inspection of, or receipt of goods/services will not constitute a waiver or any breach of warranty.

4. Literature / Manuals / Publications

Any specifics OUTSIDE of the specifications shall be stated ONLY in the bid response notes.

_Shelby County Government will not accept alternate bids (except if Construction) and/or which are not equal in specifications._

5. Standards

N/A

6. Specifications / Scope

Shelby County wishes to engage the Vendor(s) selected through a competitive process that will work well with the County’s personnel in the performance of the Goods/Services, in a cost-effective manner, and applying SCG LOSB/MWBE Ordinances.

The intent of this request is for Shelby County Government to receive bids for Renovations to the Criminal Justice Center Phases I, II & III @ 201 Poplar Avenue for the Support Services Department.

Please refer to the Award section, which adds details on full/partial proposals/awards.

The Provider must be prepared to begin within 10 days upon receipt of written Notice to Proceed.

7. Demonstration of Goods/Services

N/A
8. **EQUAL/EQUIVALENT PRODUCTS**

When applicable, Bidders may bid “or equal” or equivalent product(s) to the product specified. However, it must be stated that the Good/Service bid are either considered to be equal or equivalent to the specifications. Bidders shall provide pertinent information in the bid response notes setting out and describing the goods/services being offered if bid is for an “or equal” Good/Service.

The Administrator of Purchasing, with the requesting Department, reserves the right to approve as an equal, or to reject as not being equal, any Good/Service the Bidders propose to furnish which contains minor variations from specifications, but may comply herewith.

The Bidder shall abide by and comply with the true intent of the specifications and not take advantage of any unintentional errors or omissions, but shall fully complete every part as the true intent and meaning of the specifications.

Changes to the bid specifications are not valid unless authorized in writing by the Shelby County Purchasing Department.

Any “equal or equivalent” (OUTSIDE of the specifications) shall be stated ONLY in the bid.

*Goods/services exceeding specifications will be considered as meeting specifications.*

*Shelby County Government will not accept alternate bids (except if Construction) and/or which are not equal in specifications.*

9. **DEVIATIONS TO SPECIFICATIONS**

Any deviations from the specifications shall be stated ONLY in the bid.

*Shelby County Government will not accept alternate bids (except if Construction) and/or which are not equal in specifications.*

10. **SPECIAL PACKAGING**

N/A

11. **DELIVERIES/F.O.B. POINT**

Unless otherwise specified, all deliveries are to be F.O.B. Destination, Freight prepaid, Inside/Inplace to the ordering department per their instructions.

Refer to Inspection section.
12. LOCATIONS

Local presence
N/A

Multiple locations
N/A

13. RIGHTS OF INSPECTION AND/OR SAMPLING

Inspections & Approvals
N/A

Samples
N/A

14. FIRM PRICES / DISCOUNTS / QUANTITIES / RENEWALS

Vendors shall complete and sign their Quotation/Bid Response Form (refer to Section IV)
Vendors shall detail their prices/quotes, as applicable - including breakdown by year, skus, costs, additional fees,…
CLEARLY MENTION WHAT IS “BASE” VS “ALTERNATE #…” – you will be evaluated on your BASE.

Firm Prices & Renewal(s)
Unless otherwise specified, all prices are to be firm from the date of award through June 30, 2018.

Shelby County Government reserves the right to reject any increase and cancel this bid/agreement if the price increase is considered prohibitive.

Discounts
However, the successful Vendor shall be required to give Shelby County Government the benefit of any general price reduction at any time during the term of this award.
It is also the intent of this bid to obtain any discounts not specifically itemized in this bid. Bidders must include/specify a discount percentage off of current year pricing and provide justifications, when appropriate.

Quantities & Replacements
N/A
15. PAYMENT SCHEDULE

Prompt payment discount shall be considered a cost factor in this bid. Invoices shall be paid thirty (30) days after receipt of correct invoices. Invoices shall be sent directly to the using department.
Upon payment reception, you are required to pay your sub-contractors within specific deadlines, if applicable – tasks and deadlines are specified in our LOSB/MWBE Ordinances.

16. AWARDS (full or partial)

Shelby County Government reserves the right to reject all bids, or any part thereof, waive any informality in the bids to make award in the best interest of the County, and to request additional information, an interview, a demonstration of the bid goods/services proposed. Shelby County Government reserves the right to award this bid on the basis of individual goods/services, groups of goods/services or the entire list of goods/services, whichever is in the best interest of the County.

All decisions are made at the discretion of the County, including the Mayor and the Administrator of Purchasing (and the Board of Commissioners, if above $50,000).
The proposers whose proposals do not meet the mandatory minimum requirements will be considered non-responsive, and not eligible for Department evaluation nor award. The proposers whose proposals do not meet the Department specifications/requirements will not be eligible for award.
The intent of Shelby County Government is to award this bid based on a competitive selection of responsive proposals received, i.e. to the overall responsive low Bidder(s) meeting specifications, while applying SCG LOSM/MWBE Ordinances (including applying preferences/discounts).
The evaluation/selection process may exceptionally include a request for additional information (from Purchasing only), to support the written proposal.

After evaluation of the proposals and selection of the successful Vendor(s), they will be notified in writing.

The contents of the proposal of the successful proposer will become contractual obligations and failure to accept these obligations in a contractual agreement may result in cancellation of the award. The County reserves the right to negotiate any portions of the successful proposer’s fees, scope of work or utilize their own resources for such work.

No Purchase Order against this bid until formal Award and/or signed Contract.

17. CONTRACT / AWARD LETTER / CANCELLATION

A contract will be required, and then a Notice to Proceed will be issued to the successful vendor.
Shelby County Government reserves the right to cancel this bid for failure to provide goods/services as per the bid specifications. Cancellation will be subject to not less than a thirty (30) day notification.

18. ORDERS

Ordering of goods/services - by the County
N/A
Receiving orders and sending invoices – by the Vendor
N/A
Accepting orders - by the County
N/A

19. ADDITIONAL INFORMATION FROM THE BIDDER

Bidders are encouraged to submit additional information which they feel might be useful to the County in evaluating their bid; however, Shelby County Government reserves the right to accept or reject for consideration, during evaluation of bids, any minor variations.

Any additional information (OUTSIDE of the specifications) shall be stated ONLY in the bid response notes.

*Shelby County Government will not accept alternate bids (except if Construction) and/or which are not equal in specifications.*

20. LOSB and M/WBE

Please refer to separate section

21. QUESTIONS / INQUIRIES

All correspondence and questions concerning the RFP are to be submitted IN WRITING to:
Sonja Worthy, Buyer
Sonja.worthy@shelbycountytn.gov
Shelby County Government
Purchasing Department
160 N. Main Street, 9th Floor, Suite 900
Memphis, TN 38103

Questions should reference the RFP number & title, section of the RFP to which the questions pertain and all contact information for the person submitting the questions.

*The deadline for submitting questions will be January 30, 2018 12:00 p.m. (CST).*
All written questions submitted by the deadline indicated above will be answered and posted on the County’s website at http://www.shelbycountyn.gov/3243/Bids-Listing mostly within forty-eight (48) hours.

IN ORDER TO PREVENT AN UNFAIR ADVANTAGE TO ANY RESPONDENT, VERBAL QUESTIONS WILL NOT BE ANSWERED.

Please be aware that contact with any other personnel (other than the person clearly identified in this document) within Shelby County regarding this RFP may disqualify your company from further consideration.

These guidelines for communication have been established to ensure a fair and equitable process for ALL interested vendors.
Locally Owned Small Business (LOSB) and Minority and Woman Business Enterprises (M/WBE) Purchasing Programs

The Minimal Requirements related to LOSB/MWBE (page 13) do precise what is needed at the time of the proposal submission (for all bidders) VS. later (only for the successful Vendor).

All solicitations are subject to Shelby County Government’s Locally Owned Small Business Ordinances and Shelby County Government’s Minority and Woman Business Enterprises Ordinances, which are hereby incorporated and posted as separate attachments.

The Locally Owned Small Business (LOSB) and Minority/Woman Business Enterprises (M/WBE) Form “B” must be completed and included with your proposal, even if cannot meet the required goals. If the goals are not met, Form A is also required, with requested backup.

Shelby County Government is committed to a policy of non-discrimination pursuant to the Equal Protection provisions of the United States Constitution. It is further the policy of Shelby County that it’s purchasing and contracting practices encourage the use of Locally-Owned Small Businesses (LOSB’s) and Minority/Woman Business Enterprises (M/WBE) programs in all solicitations. In furtherance of these policy objectives, Shelby County seeks to afford all citizens equal opportunities to do business on county contracts and to ensure that all bidders, proposers, or Contractors doing business with Shelby County provide to LOSB’s and M/WBE’s, maximum practicable opportunities, commensurate with availability, price and capabilities required, to participate on contracts which are paid for, in whole or in part, with monetary appropriations from Shelby County.

Shelby County seeks to prevent discrimination against any person or business in pursuit of these opportunities on the basis of race or gender. Shelby County will conduct its contracting and purchasing programs so as to discourage any discrimination and will actively seek to resolve all claims of discrimination brought against Shelby County or any Contractors involved in such contracting and purchasing programs.
**Extracts of the LOSB & M/WBE Ordinances, Goals for this bid & Responsiveness:**

“The Board of County Commissioners may establish by Ordinance special purchasing procedures for at least 20% of the annual purchases of goods and services by the Shelby County Government to be awarded to LOSB.”

**LOSB vendors have been identified for the goods and/or services described in this bid, therefore a 20% LOSB goal will be applied.**

“The race and gender conscious remedies shall be met by the ethnic and gender groups that were found to have a statistically significant underutilization… Race and gender-conscious subcontract goals, prime discounts, and evaluation preference points are the narrowly tailored remedies to address the documented statistical disparity.”

**M/WBE vendors have been identified for the goods and/or services described in this bid, therefore below additional goal will be applied:**

- **28% MBE vendors**
- The MBE Construction goal shall be met by African American businesses.

**PLEASE contact Mr. Shep Wilbun (Shep.Wilbun@shelbycountytn.gov) for LOSB and M/WBE vendor suggestions.**

A proposal that does not meet the required goals or provide evidence of a good faith effort will be deemed “non-responsive” and therefore ineligible for award.

For SCG listing of our LOSB and M/WBE active vendors, by commodity:

[https://apps.shelbycountytn.gov/EOCListings/](https://apps.shelbycountytn.gov/EOCListings/)

For City of Memphis listing – SCG EOC welcomes the opportunity to certify City of Memphis vendors via reciprocal certifications – please have those vendors contact EOC directly to start the process before you submit your proposal, using them as subs, to meet your goals:

[https://memphis.mwsbe.com/?TN=memphis](https://memphis.mwsbe.com/?TN=memphis)
**LOSE preferences**

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<thead>
<tr>
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<th>Percentage</th>
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<tbody>
<tr>
<td>$0.00 - $500,000</td>
<td>5% of the lowest responsive bidder</td>
</tr>
<tr>
<td>$500,001 - $1,000,000</td>
<td>3% of the lowest responsive bidder</td>
</tr>
<tr>
<td>$1,000,001 - …</td>
<td>2% of the lowest responsive bidder</td>
</tr>
</tbody>
</table>

Except if Construction > $2M = 2% to General Contractors only if:

1. Headquartered and physically located in Shelby County and owned by one or more residents of Shelby County with a real, substantial, and continuing ownership of at least fifty-one percent (51%) of the business.
2. Have LOSB subs, where collectively have 50% of the total Prime contract award.

**M/WBE prime contract bid discounts - Construction**

M/WBE prime contract bid discounts shall be applied to construction prime contracts. An eight percent (8%) bid discount on construction prime contracts shall be applied to African American, Asian American prime bidders, for a maximum discount of $40,000.

*Prime has to be a M/WBE to get the discounts.*

*The discount shall lower the bid for evaluation, but not reduce the contract award.*

For any LOSB/MWBE assistance and information, Vendors may contact:

Ms. Vali Sweet  
Office of Equal Opportunity Compliance  
160 North Main Street, Suite 200  
Memphis, Tennessee 38103  
Phone: 901-222-1100  
Fax: 901-222-1101  
E-mail: Vali.Sweet@shelbycountyn.gov
ADDITIONAL LOSB and M/WBE INFORMATION

Definitions

The definitions used in this document are as follows:

1. “Bidder” or “Proposer” means any person, firm, partnership, association, or joint venture seeking to be awarded a contract or subcontract to provide goods, commodities or services.
2. “Certification” or “Certified” means a Business that is certified by Shelby County Government under the LOSB and M/WBE programs.
3. “Commercially useful function” means being responsible for the management and performance of a distinct element of the total work.
4. "Contractor/Vendor" shall mean any person or business enterprise that submits a bid or proposal to provide labor, goods, or services to Shelby County by contract for profit in the area of construction or construction-related activities; and, any person or firm who supplies or provides labor, goods, or services to Shelby County by contract for profit.
5. “Efforts to Achieve LOSB and M/WBE Participation” means that the Contractor will solicit LOSB and M/WBE Participation with respect to the procurement and will consider all sub-bids and quotations received from LOSB’s and M/WBE’s. When a subcontract is not awarded to the LOSB and M/WBE, the Contractor must document the reason(s) the award was not made and substantiate that documentation in writing pursuant to the provisions of the Programs.
7. “Non-LOSB” and “Non-M/WBE” means a business, which is not certified as a LOSB or M/WBE.
8. “Unavailable” means either that: (1) there is no LOSB and M/WBE providing goods or services requested; or, (2) no LOSB and M/WBE submitted a bid.

Requirements and Compliance

All firms or entities seeking to become Contractors as outlined herein are required to make good faith efforts to achieve LOSB and M/WBE participation (per set goals) when submitting a proposal or bidding on Shelby County procurements. Bidders and proposers shall not discriminate on the basis of race or gender when soliciting bids in the performance of Shelby County’s procurements. Discrimination complaints brought to the attention of Shelby County Office of Equal Opportunity Compliance (or its designee) will be reviewed and investigated to the extent necessary to determine the validity of such complaints and what actions, if any, should be taken by Shelby County.
Policies and Procedures

Shelby County may adopt policies and procedures as necessary to carry out and implement its powers and duties with regard to the LOSB and M/WBE Programs. It is the goal of Shelby County to encourage participation by LOSB’s and M/WBE’s and to adopt rules and regulations which achieve to the greatest extent possible a level of participation by LOSB’s and M/WBE’s taking into account the total number of all Vendors and suppliers. Therefore, Shelby County will review each procurement request to determine the maximum potential for utilization of LOSB’s and M/WBE’s, as applicable. This review is based on the availability of EOC qualified LOSB’s and M/WBE’s providing goods or services as it relates to the scope of the bid or procurement process. The following procedures may be utilized during the procurement process.

- **Vendor’s Responsibilities**

  a. **Utilization:**

  - Contractors are required to utilize legitimate LOSB’s and M/WBE’s in order to receive credit for the utilization of a LOSB and M/WBE. Contractors must document all LOSB’s and M/WBE’s to be utilized, the percentage of utilization and the intended scope of work. Such information should be submitted on **LOSB and M/WBE Form “B”**. This documentation must be submitted with the bid or negotiated proposal document.

  - **Post-Award Change** - Any Contractor who determines that a LOSB and M/WBE identified on **LOSB and M/WBE Form “B”** cannot perform the services required shall request approval from Shelby County to contract with an alternate vendor pursuant to the LOSB and M/WBE Programs. Such request will be reviewed and approved only after adequate documentation for the proposed change is presented.

  b. **Efforts to Achieve LOSB and M/WBE Participation:**

  *TO COMPLETE ONLY IF GOALS NOT MET on Form B*

  - All entities seeking to become Contractors are required to make efforts to achieve maximum LOSB and M/WBE participation, as outlined in the LOSB and M/WBE Programs, when submitting a response to a bid or negotiated proposal in response to a Shelby County procurement opportunity. Such Efforts should be **documented** on **LOSB and M/WBE Form “A”** and submitted with your bid.

  - **Unavailability** - If a potential Contractor’s efforts to obtain LOSB and M/WBE participation are unsuccessful due to the unavailability of a LOSB and M/WBE, the Contractor will submit a statement of unavailability. **LOSB and M/WBE Form “A”**.

  c. **Pre-Work Conference:**

  - Any Contractor who is the successful bidder shall be required to attend a conference with Shelby County prior to beginning the work. The primary
purpose of this conference is to review the project scope and review LOSB and M/WBE participation as outlined in **LOSB and M/WBE Form “B”**.

d. **Post-Award Change:**

- Any Contractor who determines that a LOSB and M/WBE identified on **LOSB and M/WBE Form “B”** cannot perform shall request approval from Shelby County to contract with an alternate subcontractor pursuant to the LOSB and M/WBE Programs. Such request will be reviewed and approved by the Administrator of EOC only after adequate documentation for the proposed change is presented.

**Written Agreement**

Shelby County policies and procedures on LOSB and M/WBE participation are designed to create contractual relationships between Contractors and LOSB’s and M/WBE’s. Therefore, a Contractor may utilize the services of a LOSB and M/WBE in estimating and satisfying the scope of work, provided that a written contract/agreement is executed between the Contractor and the LOSB and M/WBE.

**Certification**

To ensure that the ownership and control over decision-making and day-to-day operations of a Certified LOSB and M/WBE is legitimate, Shelby County reserves the right to verify the ownership and control of each LOSB and M/WBE utilized.

**Monitoring LOSB and M/WBE Utilization**

Shelby County intends to monitor and enforce the LOSB and M/WBE Programs. Shelby County reserves the right to conduct random audits of each of its Contractor’s LOSB’s and M/WBE’s. Shelby County reserves the right to reevaluate a LOSB’s and M/WBE’s certification at any time.

**Efforts to Achieve LOSB and M/WBE Participation**

The Contractor shall consider all proposals and quotations received from LOSB’s and M/WBE’s. When a subcontract is not awarded by a Contractor to any of the competing LOSB’s and M/WBE’s, the Contractor must document the reason(s) the award was not made to the LOSB’s and M/WBE’s. It is the responsibility of the Contractor to prove that it employed Efforts to Achieve LOSB and M/WBE participation. Evidence supporting the Contractor’s Efforts must be documented on **LOSB and M/WBE Form “A”, if goals are not met in Form B**.

The Contractor must fully cooperate with Shelby County in its post-contract award LOSB and M/WBE Program audit and compliance efforts.
Substitution of LOSB’s and M/WBE’s after Contract Award

In order to make a substitution of a LOSB and M/WBE, a Contractor must make a request to Shelby County Administrator of EOC. This request must be submitted in writing to Shelby County. Shelby County reserves the right to approve any substitution of a LOSB and M/WBE. The Contractor has the responsibility to provide Shelby County with a reasonable basis for the substitution. If the Contractor desires to substitute the LOSB and M/WBE with a Non-LOSB and Non-M/WBE, then the Contractor must comply with the Effort to Achieve LOSB and M/WBE Participation provisions set forth herein.

Noncompliance with LOSB and M/WBE Programs

Any of the following reasons, individually or collectively, may result in suspension from bidding, prohibition from contracting, and/or cancellation of contracts:

1. The failure to perform according to contract provisions relating to the LOSB and M/WBE Programs;
2. Violation of, circumvention of, or failure to comply with the LOSB and M/WBE Programs; and/or, other reasons deemed appropriate by Shelby County Questions and Information.

 LOSB and M/WBE Program Forms Description

**LOSB and M/WBE Form “B” – LOSB and M/WBE Utilization Plan**

A Contractor is required to submit LOSB and M/WBE Form “B” with its Proposal in order to identify all LOSB’s and M/WBE’s they propose to utilize in providing the goods and services included in the Proposal. Contractors may only include a proposed provider of goods or services on LOSB and M/WBE Form “B”, if the entity is a legitimate LOSB and M/WBE. Additionally, if such entity will provide services, Contractors may only list LOSB’s and M/WBE’s on LOSB and M/WBE Form “B” if the entity will perform a Commercially Useful Function. The Successful Contractor will be required to finalize and submit LOSB and M/WBE Form “B” prior to award of a contract. LOSB and M/WBE Form “B” will be incorporated into the contract and will become a contractual obligation of the Successful Contractor. LOSB and M/WBE Form “B” shall not be changed or altered after award of a contract without approval from Shelby County. The Contractor is required to provide written notice describing the reasons for any proposed change to Shelby County and to obtain approval from Shelby County of any changes to LOSB and M/WBE Form “B”.

**LOSB and M/WBE Form “A” -- Certification of Efforts**

If goals are not met in Form B, Contractors are required to submit LOSB and M/WBE Form “A” with proposals as evidence and documentation of efforts that have been made to contact LOSB’s and M/WBE’s for participation as subcontractors, joint venture partners, or suppliers of goods and services. Contractors are required to contact LOSB’s and M/WBE’s and solicit quotes for goods and services. All responses to the Contractor’s solicitation should be recorded and reported.
Questions and Information

For any LOSB/MWBE assistance and information, Vendors may contact:

Ms. Vali Sweet
Office of Equal Opportunity Compliance
160 North Main Street, Suite 200
Memphis, Tennessee 38103
Phone: 901-222-1100
Fax: 901-222-1101
E-mail: Vali.Sweet@shelbycountytn.gov

The LOSB & MWBE Programs are consistent with Shelby County Policies and Procedures. Wherever conflicts exist, the provision in the Shelby County Policies and Procedures will prevail.
Company Name: _________________________________
Bid No.: _________________________________

For each category below, please:
- describe the efforts made to achieve LOSB participation on this project. The requirement for each item is described in detail in Shelby County Government’s Locally Owned Small Business Ordinances. If additional space is needed to describe the efforts made, please feel free to provide an attachment to this document.
- provide proper backup (email copy, web page printed, documentation of verbal communications,…).

**NOTES:** Solicited LOSBs to be registered with Shelby County EOC Office and **minimum score of 80 points must be achieved in order to be considered a responsive bidder.**

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<tbody>
<tr>
<td>A</td>
<td>Advertising (5 points)</td>
</tr>
<tr>
<td>B</td>
<td>Attend the Pre-bid Meeting (5 points)</td>
</tr>
<tr>
<td>C</td>
<td>Bidder’s Outreach to identify locally owned small businesses (LOSBs) (15 Points)</td>
</tr>
<tr>
<td>D</td>
<td>Contacts &amp; Follow-ups with LOSBs (15 points)</td>
</tr>
<tr>
<td>E</td>
<td>Identify Items of Work, in this case what part of the bid can be achieved by LOSBs (15 points)</td>
</tr>
<tr>
<td>F</td>
<td>Negotiate in Good Faith with LOSBs (15 Points)</td>
</tr>
<tr>
<td>G</td>
<td>Offer Assistance in Securing Financing (10 Points)</td>
</tr>
<tr>
<td>H</td>
<td>Provide Timely Written Notification to solicited LOSBs (20 points)</td>
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Submitted by:

_____________________________________    __________________________________
Authorized Representative Signature   Title

____________________________  
Date
Shelby County
LOSB Program

LOSB FORM B

LOSB UTILIZATION PLAN (20% goal)
(To Be Submitted with the Bid/Proposal)

Company Name: _________________________________
Bid No.: _________________________________

I, _________________________________, do certify that on the following procurement opportunity,  
(Vendor) _________________________________, the following LOSB’s will be utilized as sub-vendors, suppliers,  
(Opportunity) _________________________________, or to provide other services/goods:

<table>
<thead>
<tr>
<th>LOSB Biz Names (Prime or Subs)</th>
<th>Description of the work</th>
<th>Value ($)</th>
<th>NAICS Codes for this bid</th>
<th>SCG LOSB Number (must be active)</th>
</tr>
</thead>
<tbody>
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TOTAL LOSB Committed Participation** ($)  
TOTAL Proposed Costs for this Bid/Contract*($)  
TOTAL LOSB Committed Participation** (%)  

* = base proposal $, including contingency (excluding alternates)  
** = % prevails

The successful bidder/proposer is required to finalize and submit this form prior to award of a contract.  
Joint Venture Agreements, partnering agreements and all pertinent information must be presented prior to  
contract award. This information will be incorporated into the contract and will become a contractual  
obligation of the successful bidder/proposer. The finalized LOSB Form B shall not be changed or  
altered after award of a contract without approval from Shelby County. The successful bidder/proposer  
is required to provide written notice describing the reasons for the change to Shelby County Purchasing  
Administrator, to obtain approval of any changes to LOSB Form B.

Submitted by:

_____________________________________    __________________________________
Authorized Representative Signature   Title

______________________________
Date
Shelby County
LOSB Program
LOSB FORM C

STATEMENT OF INTENT TO PERFORM AS A SUBCONTRACTOR OR PROVIDE SUPPLIES OR SERVICES
(To Be Submitted only prior to Contract Award)

Company Name: ______________________
Bid No.: ___________________________

I, ________________________________, intend to provide supplies or services in connection with the above bid/proposal request as a LOSB.

I am prepared to perform a “Commercially Useful Function” in connection with the above project.

The following are the work items to be performed:

________________________________________________________________________________________

________________________________________________________________________________________

at the following price: $_________________________.

If applicable, please complete the following:

I have or will enter into a formal agreement with _____________________________ for the above-described scope of work, supplies, or services conditioned upon the execution of a contract with Shelby County.

Business Information: Submitted by:

Business: ___________________________ Authorized Representative (Print)

Address: ___________________________ Title

_____________________________________ Authorized Representative’s Signature

Phone: _____________________________ Date

Facsimile: __________________________
Shelby County  
LOSB Program

LOSB FORM D

STATEMENT OF PAYMENTS TO LOSB’S  
(To Be Submitted Monthly and with Final Payment Request)

Company Name: ________________________________
Name/Contract No.: _____________________________
Payment Request Number: _______________________

<table>
<thead>
<tr>
<th>Name of Firm</th>
<th>Description of work</th>
<th>Total Amount Due This Month</th>
<th>Total Dollars Paid To Date</th>
<th>% of Contract Completed</th>
<th>Start Date of Contract</th>
<th>End Date of Contract</th>
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(If additional space is needed this form may be duplicated)

I hereby certify that this statement is true and that above payments have been made.

Business Information: Submitted by:

Business: __________________________
Address: __________________________
Phone: ____________________________
Facsimile: _________________________

Authorized Representative (Print)
Title
Authorized Representative’s Signature
Date
Shelby County
M/WBE Program

M/WBE FORM A

EFFORTS TO ACHIEVE M/WBE PARTICIPATION
(To Be Submitted with the Bid/Proposal IF GOALS NOT MET on M/WBE Form B)

Construction (Professional Services)

Company Name: _________________________________
Bid No.: _________________________________

For each category below, please:

- describe the efforts made to achieve M/WBE participation on this project. The requirement for each item is described in detail in Shelby County Government’s Minority/Women Business Enterprise Ordinances. If additional space is needed to describe the efforts made, please feel free to provide an attachment to this document.
- provide proper backup (email copy, web page printed, documentation of verbal communications,…).

NOTES: Solicited M/WBEs to be registered with Shelby County EOC Office and minimum score of 80 points must be achieved in order to be considered a responsive bidder.

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<td>D</td>
<td>Contacts &amp; Follow-ups with M/WBEs (15 points)</td>
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<td>E</td>
<td>Identify Items of Work, in this case what part of the bid can be achieved by M/WBEs (15 points)</td>
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<tr>
<td>H</td>
<td>Provide Timely Written Notification to solicited M/WBEs (20 points)</td>
</tr>
</tbody>
</table>

Submitted by:

_____________________________________    __________________________________
Authorized Representative Signature   Title

________________________________
Date
Company Name: _________________________________
Bid No.: _________________________________

I, _____________________________________, do certify that on the following procurement opportunity, (Vendor) ___________________________________, the following M/WBE’s will be utilized as sub-vendors, suppliers, (Opportunity) or to provide other services/goods:

<table>
<thead>
<tr>
<th>MBE Biz Name &amp; Race (Prime or Subs)</th>
<th>Description of the work</th>
<th>Value ($)</th>
<th>NAICS Codes for this bid</th>
<th>SCG MBE Number (must be active)</th>
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TOTAL M/WBE Committed Participation** ($) 
TOTAL Proposed Costs for this Bid/Contract*($) 
TOTAL M/WBE Committed Participation** (%)

Goals = 28% for MBEs

* = base proposal $, including contingency (excluding alternates)
** = % prevails

The successful bidder/proposer is required to finalize and submit this form prior to award of a contract. Joint Venture Agreements, partnering agreements and all pertinent information must be presented prior to contract award. This information will be incorporated into the contract and will become a contractual obligation of the successful bidder/proposer. The finalized M/WBE Form B shall not be changed or altered after award of a contract without approval from Shelby County. The successful bidder/proposer is required to provide written notice describing the reasons for the change to Shelby County Purchasing Administrator, to obtain approval of any changes to M/WBE Form B.

Submitted by: ___________________________________________ ________________  
Authorized Representative Signature   Title   

__________________________ Date
Company Name: ______________________
Bid No.:_________________________

I, ________________________________, intend to provide supplies or services in connection with the (Subcontractor/Provider) above bid/proposal request as a M/WBE.

I am prepared to perform a “Commercially Useful Function” in connection with the above project.

The following are the work items to be performed:

________________________________________________________________________

________________________________________________________________________

at the following price: $_________________________.

If applicable, please complete the following:

I have or will enter into a formal agreement with _____________________________ for the above-described scope of work, supplies, or services conditioned upon the execution of a contract with Shelby County.

I hereby certify that this statement is true and correct:

Business Information: Submitted by:
Business: __________________________
Address: __________________________
Phone: __________________________
Facsimile: _________________________

Authorized Representative (Print) __________________________________________________________________________
Title ______________________________________________________________________________________________________
Authorized Representative’s Signature ________________________________________________________________________
Date ______________________________________________________________________________________________________
Shelby County  
M/WBE Program  

M/WBE FORM D  

STATEMENT OF PAYMENTS TO M/WBE’S  
(To Be Submitted Monthly and with Final Payment Request)  

Company Name: ________________________________  
Name/Contract No.: ________________________________  
Payment Request Number: _________________________  

<table>
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<tr>
<th>Name of Firm</th>
<th>Description of work</th>
<th>Total Amount Due This Month</th>
<th>Total Dollars Paid To Date</th>
<th>% of Contract Completed</th>
<th>Start Date of Contract</th>
<th>End Date of Contract</th>
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</table>

(If additional space is needed this form may be duplicated)  

I hereby certify that this statement is true and that above payments have been made.  

Business Information: Submitted by:  
Business: ________________________________  
Authorized Representative (Print)  
Address: ________________________________  
Title  
______________________________________  
Authorized Representative’s Signature  
Phone: ________________________________  
Date  
Facsimile: ________________________________
DRUG-FREE WORKPLACE AFFIDAVIT

STATE OF__________________

COUNTY OF__________________

The undersigned, principal officer of ________________________________, an employer of five (5) or more employees contracting with _______________County government to provide goods and/or services states under oath as follows:

1. The undersigned is a principal officer of ____________________________________ (hereinafter referred to as the “Company”), and is duly authorized to execute this Affidavit on behalf of the Company.

2. The Company submits this Affidavit pursuant to T.C.A. § 50-9-113, which requires each employer with no less than five (5) employees receiving pay who contracts with the state or any local government to provide goods and/or services to submit an affidavit stating that such employer has a drug-free workplace program that complies with Title 50, Chapter 9, of the Tennessee Code Annotated.


Principal Officer (Name and Signature) ____________________________________________

STATE OF__________________

COUNTY OF__________________

Before me personally appeared______________ with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that such person executed the foregoing affidavit for the purposes therein contained.

Witness my hand and seal at office this _____ day of ______________, 20______

Notary Public: __________________________

My Commission Expires: ______________

NOTE: if less than five (5) employees, pls mark n/a and sign/submit with your proposal
INSTRUCTIONS: This form is for all individuals receiving any Shelby County Government contract, subcontract, land use approval or financial grant of money to report any gratuity that has been given, directly or indirectly, to any elected official, employee or appointee (including their spouse and immediate family members) who is involved in the decision regarding the contract, land use approval, or financial grant of money.

1. COMPANY/VENDOR NAME

2. DATE OF GRATUITY

3. NATURE AND PURPOSE OF THE GRATUITY

4. NAME OF THE OFFICIAL, EMPLOYEE, APPOINTEE, OR FAMILY MEMBER WHO RECEIVED THE GRATUITY

5. NAME OF THE PERSON OR ENTITY THAT PROVIDED THE GRATUITY
6. ADDRESS OF THE PERSON OR ENTITY THAT PROVIDED THE GRATUITY

__________________________________________________________

7. DESCRIPTION OF THE GRATUITY

__________________________________________________________

8. COST OF THE GRATUITY (If cost is unknown and not reasonably discernible by the person giving the gratuity, then the person giving the gratuity shall report a good faith estimate of the cost of the gratuity.)

__________________________________________________________

9. The information contained in this Gratuity Disclosure Form, and any supporting documentation or materials referenced herein or submitted herewith, is true and correct to the best of my knowledge, information and belief and I affirm that I have not given, directly or indirectly, any gratuity to any elected official, employee or appointee (including their spouse and immediate family members) that has not been disclosed and I affirm that I have not violated the provisions of the Shelby County Code of Ethics.

__________________________________________________________

Signature  Date

__________________________________________________________

Print Name

A copy of your completed form will be placed on the Shelby County Internet website.
A copy of your signature will not be accepted. Form must have original signatures.
REQUEST FOR QUOTATION

NUMBER SB  1000492  DATE

THE ABOVE NUMBER MUST APPER ON ALL QUOTATIONS AND RELATED CORRESPONDENCE.

THIS IS NOT AN ORDER

AS A CONDITION TO BID AWARD, IF ITEMS CONTAINED IN THIS BID REQUIRE MATERIAL SAFETY DATA SHEETS, THE SUCCESSFUL BIDDER SHALL PROVIDE DATA SHEETS WITH DELIVERY OF PRODUCTS.

QUOTED NOT LATER THAN 2/6/2018, 2:00 PM

DATE DELIVERED REQ. ASAP

F.O. B. DESTINATION

REQUISITION NUMBER 0794

REQUISITION DATE 10/31/17

BUYER S. Worthy

If you do not respond to this request for bid a “BID” or "NO BID", we will assume that you no longer wish to bid on the commodity indicated below, and your company’s name may be removed from the mailing list.

910-65 REMODELING AND ALTERATIONS

BASE YOUR QUOTATIONS ON THE TERMS AND CONDITIONS PRINTED AND/OR TYPED HEREON

ITEM  QUANTITY  UNIT  DESCRIPTION  UNIT PRICE  AMOUNT

NOTICE TO BIDDERS:

THIS IS OUR SEALED BID 1000492, WHICH IS DUE NO LATER THAN 2:00 PM 2/6/18. THE “GENERAL TERMS AND CONDITIONS”, AS OUTLINED IN SECTION II, WILL TAKE THE PLACE OF THE “GENERAL BID REQUIREMENTS” SHOWN ON THE NEXT PAGE OF THIS REQUEST FOR QUOTATION FORM.

IF YOU DO NOT RESPOND TO THIS REQUEST FOR BID WITH A “BID” OR A “NO BID”, WE WILL ASSUME YOU NO LONGER WISH TO BID ON THE COMMODITY INDICATED ABOVE, AND YOUR COMPANY’S NAME MAY BE REMOVED FROM THE MAILING LIST.

Page 1 (signature required on this page)

THIS IS NOT AN ORDER

NOTE DELIVERY REQUIRED AND IN QUOTING, ADVISE DEFINITE DELIVERY

TOTAL

FIRM NAME  TELEPHONE NO.  DATE OF QUOTATION

FEDERAL I. D. NO.  TERMS  DELIVERY PROMISED

EFFECTIVE UNTIL  SIGNATURE  OFFICIAL TITLE

ALL BOXES ABOVE MUST BE COMPLETED FOR YOUR BID TO BE CONSIDERED.
Shelby County Government
Renovations to the Criminal Justice Center
Phases I, II & III

Shelby County Government
Quotation/Bid Response Form
201 Poplar Avenue
Memphis, Tennessee 38103

Attention:

In compliance with the Request For Quotation for the Renovations to the Criminal Justice Center, Phases I, II & III located at 201 Poplar Avenue, the undersigned bidder, acknowledges; having received, examined, and understands the Drawings, Project Manual and contract form referenced, and being fully advised as to the extent and character of the work to be performed, and the equipment to be furnished, hereby propose to furnish all labor, tools, materials, plant and equipment necessary for the Renovations to the Criminal Justice Center, Phases I, II & III located at 201 Poplar Avenue. The undersigned further proposes to perform all work and furnish all equipment in accordance with Drawings and Project Manual prepared by Evans Taylor Foster Childress Architects, dated August 15, 2017, including all Addenda and contract stipulations thereof, within the time limit specified, for the price so stated below. The undersigned also acknowledges that he has visited the site, has familiarized himself with the local conditions under which the Work is to be performed and has correlated his observations with the requirements of the Contract Documents.

GENERAL CONSTRUCTION BASE BID: The Project Base Bid (Phase I) consists of the interior renovation of existing area within the CJC Administration Tower located at 201 Poplar Avenue, Memphis, TN, and as indicated on the drawings to include all work as required and associated in conjunction for the complete renovation of Floors 2 West and 11. The existing building is comprised of non-combustible, protected construction, fully sprinklered with this phase of the work having an approximate floor area of 37,263 square feet. The Contract Drawings more specifically located and define this project base bid. Base Bid construction must be completed within Three Hundred Sixty (360) calendar days after beginning date of "Notice To Proceed" for this designated work. This work is anticipated to be approved by the Owner pending funding availability through a Base Bid Contract after January 2018.

($)_______________________________________________________________ State amount in both words and figures.

Bidder acknowledges receipt of Addenda as follows:

Addendum No.____ dated_______ Addendum No.____ dated________
Addendum No.____ dated_______ Addendum No.____ dated________
Addendum No.____ dated_______ Addendum No.____ dated________
Addendum No.____ dated_______ Addendum No.____ dated________

BASE BID SUBCONTRACTOR LISTING:
General Construction Bid below includes the following Base Bid Subcontractors in amounts listed for each trade:

Masonry Work*____________________________________________($___________________________)
HVAC
Work*____________________________________________($___________________________)

Plumbing
Work*____________________________________________($___________________________)

Sprinkler
Work*____________________________________________($___________________________)

Electrical
Work*____________________________________________($___________________________)

*Write in appropriate subcontractor’s full company name.

ALTERNATES

A. The Bidder agrees to include the work of the following Alternates as specified in Section 01 2300:

1. Alternate No. 1: Project Alternate Number 1 (Phase II) consists of the interior renovation of existing area within the CJC Administration Tower located at 201 Poplar Avenue, Memphis, TN., and as indicated on the drawings to include all work as required and associated in conjunction for the complete renovation of Floors 3, 12 Northwest and the Upgrade and Modernization of the two (2) Public Escalators located from the First Floor to the Lower Level. The existing building is comprised of non-combustible, protected construction, fully sprinklered with this phase of the work having an approximate floor area of 28,768 square feet. The Contract Drawings more specifically locate and define this project alternate. Alternate Number 1 construction must be completed within Four Hundred Twenty (420) calendar days after beginning date of “Notice To Proceed” for this designated work. This work is anticipated to be approved by the Owner pending funding availability through a Change Order after July 2018.

To General Construction Base Bid above, add the sum of ___________________________________________________ ($ ___________) for work required by Alternate No. 1 in accord with Section 01 2300 ALTERNATES.

2. Alternate No. 2: Project Alternate Number 2 (Phase III) consists of the interior renovation of existing area within the CJC Administration Tower located at 201 Poplar Avenue, Memphis, TN., and as indicated on the drawings to include all work as required and associated in conjunction for the complete renovation of Floors 4, Partial North Lower Level and 2 East. The existing building is comprised of non-combustible, protected construction, fully sprinklered with this phase of the work having an approximate floor area of 39,952 square feet. The Contract Drawings more specifically locate and define this project alternate. Alternate Number 2 construction must be completed within Four Hundred Twenty (420) calendar days after beginning date of “Notice To Proceed” for this designated work. This work is anticipated to be approved by the Owner pending funding availability through a Change Order after July 2019.

To General Construction Base Bid above, add the sum of ___________________________________________________ ($ ___________) for work required by Alternate No. 2 in accord with Section 01 2300 ALTERNATES.

3. Alternate Number 3: Project Alternate Number 3 (Combined Pricing for Phases I, II & III – Base Bid and Alternates 1 & 2 above) consists of the interior renovation of existing area within the CJC Administration Tower located at 201 Poplar Avenue, Memphis, TN., and as indicated on the
drawings to include all work as required and associated in conjunction for the complete renovation of Phases I, II & III in sequential order as noted above. The existing building is comprised of non-combustible, protected construction, fully sprinklered with this phase of the work having an approximate floor area of 105,872 square feet. The Contract Drawings more specifically locate and define this project alternate. Alternate Number 3 construction must be completed within One Thousand Eighty (1,080) calendar days after beginning date of “Notice To Proceed” for this designated work. This work is anticipated to be approved by the Owner pending funding availability through a Contract after January 2018.

To General Construction Base Bid above, add the sum of

_________________________________________________ ($ ___________)

for work required by Alternate No. 3 in accord with Section 01 2300 ALTERNATES.

B. Offer Alternates only as stipulated herein.

UNIT PRICES

1. The following unit prices are to be submitted by the Bidder only if and as instructed for the purpose of establishing the unit sums to be added to or deducted from the contract amount for increase or decrease in quantity of work and materials. Unit pricing to be in accordance with the requirements of Section 01 2200.

2. Unit price shall cover the cost of materials in place including all labor, materials, equipment, incidental and services, overhead and profit required to render same complete. Include separate attached sheet as a part of bid if sufficient room is not available.

<table>
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<tr>
<th>ITEM</th>
<th>UNIT</th>
<th>PRICE</th>
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<tr>
<td>1. Unit Price Number 1</td>
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</table>

LIQUIDATED DAMAGES

If the Contractor fails to substantially complete the Work for each Phase within the time constraints noted within these documents, a deduction will be made from the money due the Contractor from the Owner hereunder, not as a penalty, but as liquidated damages (hereinafter “Liquidated Damages”). For each calendar day after the substantial completion date that the Contractor fails to achieve substantial completion of the Work, the amount of Liquidated Damages shall be $500.00 per consecutive calendar day. As an additional stipulation to achieve substantial completion, the Contractor must obtain all final governmental inspections and occupancy approvals from all Authorities Having Jurisdiction (AHJ). In addition to the foregoing sum, the Contractor agrees to pay the Owner the sum of $500.00 per consecutive calendar day for each calendar day that the Contractor does not achieve final completion of the Project after thirty (30) days from the substantial completion date.

Bidder understands that the Owner has the right to accept, select and/or reject any and/or all bids and/or alternates, if any, in any order he deems to be in his best interest and to waive any informalities. Bidder further agrees that if the Owner exercises his right to reject and/or select any bid he deems to be in his best interest, that such action by the Owner will not accrue liability to either the Architect and/or Owner either prior to and/or after such action by the Owner. The bidder agrees that his bid shall be good and may not be withdrawn for a period of one hundred twenty (120) days after the scheduled closing time for receiving bids.
Upon receipt of written notice of acceptance of this bid, Bidder will execute the formal contract referenced within ten (10) days and deliver a surety bond or bonds and insurance coverage in the time frames stipulated as required by the General Conditions. All bonds shall be approved in writing evidenced by a signature or counter-signature of an agent regularly commissioned and licensed to transact insurance business in the State of Tennessee. The bid security attached in the sum of five percent (5%) of the bid is to become the property of the Owner in the event the contract, bond, and insurance certificates are not executed within the time limit set forth, as liquidated damages for the delay and additional expenses to the Owner caused thereby.

CERTIFICATION OF LICENSING QUALIFICATIONS

1. Tennessee State Contractor Certificate of Responsibility Number _____________________________.

2. Type of above License _________________________________________________________________.

3. Monetary limits of above License _______________________________________________________.

4. Expiration date of above License _______________________________________________________.

REQUIRED FORMS ATTACHED

1. Bid Surety   ____ yes   ____ no

2. Power of Attorney   ____ yes   ____ no

3. Other (if any)   ____ yes   ____ no

Respectfully Submitted:

CORPORATIONS ONLY FILL IN THE FOLLOWING:  

______________________________ ____________________ ___________

(Legal Name of Corporation)       (Legal Name of Bidding Firm)

______________________________ ____________________ ___________

(Address)                        (Address)

______________________________ ____________________ ___________

(Typed Name of Officer)(Typed Name of Officer)

______________________________ ____________________ ___________

(Signature of Officer)           (Signature of Officer)
Shelby County Government
Renovations to the Criminal Justice Center
Phases I, II & III
(Title of Officer)  (Title of Officer)

(Telephone Number)  (Telephone Number)

NOTE: If a corporation, bid must be signed by person authorized to bind it to contract.

END OF SECTION
THE AMERICAN INSTITUTE OF ARCHITECTS

AIA Document A310

Bid Bond

KNOW ALL MEN BY THESE PRESENTS, that we

(Here insert full name and address or legal title of Contractor)

as Principal, hereinafter called the Principal, and

(Here insert full name and address or legal title of Surety)

a corporation duly organized under the laws of the State of

as Surety, hereinafter called the Surety, are held and firmly bound unto

(Here insert full name and address or legal title of Owner)

as Obligee, hereinafter called the Obligee, in the sum of Dollars ($ ),

for the payment of which sum well and truly to be made, the said Principal and the said Surety,

bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and

severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for

(Here insert full name, address and description of project)

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this day of 20

(Principal) (Surety)

(Witness) (Title)

(Witness) (Seal)

AIA DOCUMENT A310 - BID BOND - AIA @ - FEBRUARY 1970 ED - THE AMERICAN INSTITUTE OF ARCHITECTS, 1735 N.Y. AVE., N.W., WASHINGTON, D.C. 20006
THE AMERICAN INSTITUTE OF ARCHITECTS
AIA Document A311

Performance Bond

KNOW ALL MEN BY THESE PRESENTS: that

as Principal, hereinafter called Contractor, and,

as Surety, hereinafter called Surety, are held and firmly bound unto

as Obligee, hereinafter called Owner, in the amount of

Dollars ($ ),

for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,

Contractor has by written agreement dated 19 entered into a contract with Owner for

in accordance with Drawings and Specifications prepared by

which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.
PERFORMANCE BOND

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the Owner.

Whenever Contractor shall be, and declared by Owner to be in default under the Contract, the Owner having performed Owner's obligations thereunder, the Surety may promptly remedy the default, or shall promptly

1) Complete the Contract in accordance with its terms and conditions, or

2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the Owner elects, upon determination by the Owner and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term “balance of the contract price,” as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any amendments thereto, less the amount properly paid by Owner to Contractor.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators or successors of the Owner.

Signed and sealed this day of 20

__________________________

__________________________

AIA DOCUMENT A311 - PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND - AIA ®
FEBRUARY 1970 ED. · THE AMERICAN INSTITUTE OF ARCHITECTS. 1735 N.Y. AVE., N.W., WASHINGTON, D. C. 20006
THE AMERICAN INSTITUTE OF ARCHITECTS

AIA Document A311

Labor and Material Payment Bond

THIS BOND IS ISSUED SIMULTANEOUSLY WITH PERFORMANCE BOND IN FAVOR OF THE OWNER CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT.

KNOW ALL MEN BY THESE PRESENTS: that

as Principal, hereinafter called Principal, and,

as Surety, hereinafter called Surety, are held and firmly bound unto

as Obligee, hereinafter called Owner, for the use and benefit of claimants as hereinbelow defined, in the amount of

for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,

Principal has by written agreement dated

entered into a contract with Owner for

in accordance with Drawings and Specifications prepared by

which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.
LABOR AND MATERIAL PAYMENT BOND

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS such that, if Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.

2. The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimants work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.

3. No suit or action shall be commenced hereunder by any claimant:

a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: the Principal, the Owner, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial

Signed and sealed this

(W/n=ss)  
(V/n=ss)  

(day of)

accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, Owner or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.

b) After the expiration of one (1) year following the date on which Principal ceased Work on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether or not claim for the amount of such lien be presented under and against this bond.

(Principal)
(Principal)
(Till)
(Till)
(Surety)
(Surety)

(Seal)
(Seal)
CONTRACT

This contract (the “Contract”) entered into this _____ day of ___________, 20__, and between SHELBY COUNTY GOVERNMENT, hereinafter referred to as "COUNTY" and ______________, hereinafter referred to as "CONTRACTOR".

WITNESSETH

WHEREAS, the COUNTY has the need for the provision of professional services for ______________________________; and

WHEREAS, the COUNTY issued Request for Quotation #________________ for Shelby County Government - ______________________, on ________, 2017 and CONTRACTOR submitted a bid/Quotation in accordance with bid specifications on ____________, 2017; and

WHEREAS, the CONTRACTOR has the knowledge and expertise to provide such services; and

WHEREAS, the COUNTY awarded the Request for Quotation to CONTRACTOR on ________, 2017; and

WHEREAS, the parties are desirous of entering into a contract setting forth the terms and conditions under which the CONTRACTOR will provide said services.

NOW THEREFORE, for and in consideration of mutual promises and covenants herein contained, CONTRACTOR agrees and undertakes the PROJECT in accordance with the Bid Specifications which are on file in the Shelby County Purchasing Department and which are incorporated herein by reference at the price quoted for said PROJECT by CONTRACTOR.

I. SCOPE OF WORK

1. The CONTRACTOR shall provide the services as outlined within the County’s Request for Quotation # ____________ for Shelby County Government - ______________________ and CONTRACTOR’S response thereto which are attached hereto as Exhibits “A” and “B” respectively and incorporated herein by reference as if stated verbatim (the “Services”).

2. CONTRACTOR shall coordinate all work with COUNTY through the Shelby County Public Works Department. Work shall be
completed within ___________________ (___) days of the date noted on the notice to proceed from Shelby County Government

3. The CONTRACTOR shall give a Performance Bond and Labor and Material Bond, each equal to one-hundred percent (100%) of the amount of the Contract, with surety to be approved by the COUNTY, conditioned upon the full and faithful performance of all the terms and conditions of the Contract with special reference to paying in full in lawful money of the United States, all just and valid claims for material and labor entered into for the said work covered by this Contract. That further, this Contract shall not take effect until these Bonds have been executed and approved by the County.

4. All work by CONTRACTOR is to be performed in a manner satisfactory to COUNTY, and in accordance with the established customs, practices and procedures of COUNTY, CONTRACTOR is to periodically request sufficient conferences to insure that the work is being done by CONTRACTOR in a satisfactory manner in accordance with the specifications as set forth in Exhibit A and as directed by the County Engineer.

II. TERM AND COMPENSATION

1. The term of this Contract (the “Term”) will commence upon the execution of this Contract and continue for a period of ________________ (___) days. If authorization for the work is given in phases, the term shall extend to ________________ (___) days from the last authorized phase, but shall not extend past a period of ________________.

2. The COUNTY agrees to compensate the CONTRACTOR for the provision of the Services in accordance with Cost and Fees section of the Response to Request for bid, attached hereto as Exhibit “B” and incorporated herein by reference.

In any event, the sum total of the total for the services provided by CONTRACTOR shall not to exceed ________________ ($______________) (“the fee”) during the term of this Contract which shall include all reimbursable expenses. It is the duty of the CONTRACTOR to monitor such fees, costs, and expenses to ensure the CONTRACTOR does not exceed this total dollar amount. The COUNTY expressly reserves the right to deny payment of any amount billed in excess of ________________ ($______________).

3. The CONTRACTOR shall submit invoices to the COUNTY on a monthly basis. Invoices shall be submitted in duplicate to
the address set forth in the NOTICE section of this Contract. The COUNTY shall pay such approved invoices in accordance with the terms set forth within the County’s Request for Quotation # ___________ attached hereto as Exhibits “A”. The COUNTY is not obligated to pay, and will withhold from payment, any amounts the COUNTY has in dispute with the CONTRACTOR based on CONTRACTOR’S non-performance or negligent performance of any of the Services under this Contract.

4. CONTRACTOR shall not be permitted or authorized to incur costs beyond the extent that purchase orders have been issued on approved contracts and/or purchases prior to the commencement date, during the term of the contract, and/or subsequent to the termination date of County contracts or purchases without prior, expressly written, appropriate authorization pursuant to County purchasing procedures and rules and regulations. County is not obligated to pay nor shall CONTRACTOR be entitled to receive payments for contract fees and expenses incurred in violation of this provision.

III. GENERAL CONDITIONS

The parties further agree as follows:

1. CONTROL

All Services by the CONTRACTOR will be performed in a manner satisfactory to the COUNTY, and in accordance with the generally accepted business practices and procedures of the COUNTY.

2. CONTRACTOR'S PERSONNEL

The CONTRACTOR certifies that it presently has adequate qualified personnel to perform all Services required under this Contract. All work performed during the Term of this Contract will be supervised by the CONTRACTOR. The CONTRACTOR further certifies that all of its employees assigned to serve the COUNTY have such knowledge and experience as required to perform the duties assigned to them. Any employee of the CONTRACTOR who, in the opinion of the COUNTY, is incompetent, or whose conduct becomes detrimental to the work, shall immediately be removed from association with the Services under this Contract.

3. INDEPENDENT STATUS

a. Nothing in this Contract shall be deemed to represent that the CONTRACTOR, or any of the CONTRACTOR's employees or agents, are the agents, representatives, or employees
of the COUNTY. The CONTRACTOR will be an independent
CONTRACTOR over the details and means for performing the
Services under this Contract. Anything in this Contract
which may appear to give the COUNTY the right to direct
the CONTRACTOR as to the details of the performance of
the Services under this Contract or to exercise a measure
of control over the CONTRACTOR is solely for purposes of
compliance with local, state and federal regulations and
means that the CONTRACTOR will follow the desires of the
COUNTY only as to the intended results of the scope of
this Contract.

b. It is further expressly agreed and understood by
CONTRACTOR that neither it nor its employees or agents
are entitled to any benefits which normally accrue to
employees of the COUNTY; that CONTRACTOR has been
retained by the COUNTY to perform the Services specified
herein (not hired) and that the remuneration specified
herein is considered fees for the Services performed (not
wages) and that invoices submitted to the COUNTY by
CONTRACTOR for the Services performed shall be on the
CONTRACTOR’s letterhead.

4. REPORTS

CONTRACTOR shall prepare and submit quarterly reports of its
activities, funded under this Contract, to the originating
department and the Contract Administration Department of the
COUNTY. The reports shall include an itemization of the use
of COUNTY’s funds, and shall be inclusive of specific Services
delivered. Any such reports provided to the COUNTY shall be
prepared with the understanding that the COUNTY may make such
reports available to the public. The quarterly reports and
all books of account and financial records that are specific
to the work performed in accordance with this Contract may be
subject to audit by the Director of the Division of
Administration and Finance of the COUNTY. The COUNTY shall
have the right to withhold future disbursement of funds under
this Contract and any future Contracts until this provision
has been met.

5. TERMINATION OR ABANDONMENT

a. It shall be cause for the immediate termination of this
Contract if, after its execution, the COUNTY determines
that:

   i) Either the CONTRACTOR or any of its principals,
   partners or corporate officers, if a corporation,
   including the corporation itself, has pled nolo
contendere, or has pled or been found guilty of a criminal violation, whether state or federal, involving, but not limited to, governmental sales or purchases, including but not limited to the rigging of bids, price fixing, or any other collusive and illegal activity pertaining to bidding and governmental contracting; or

ii) CONTRACTOR has subcontracted, assigned, delegated, transferred its rights, obligations or interests under this Contract without the COUNTY’s consent or approval; or

iii) CONTRACTOR has filed bankruptcy, become insolvent or made an assignment for the benefit of creditors, or a receiver, or similar officer has been appointed to take charge of all or part of CONTRACTOR assets.

b. The COUNTY may terminate the Contract upon five (5) days written notice by the COUNTY or its authorized agent to the CONTRACTOR for CONTRACTOR’s failure to provide the Services specified under this Contract.

c. This Contract may be terminated by either party by giving thirty (30) days written notice to the other, before the effective date of termination (the “Termination Date”). In the event of such termination, the CONTRACTOR shall be paid for all Services rendered prior to the Termination Date, provided the CONTRACTOR shall have delivered to COUNTY such statements, accounts, reports and other materials as required under this Contract; however, CONTRACTOR shall not be compensated for any anticipatory profits that have not been earned as of the date of the Termination Date. All Services completed by CONTRACTOR prior to the Termination Date shall be documented and tangible work documents shall be transferred to and become the sole property of the COUNTY prior to payment for the Services rendered.

d. Notwithstanding the above or any section herein to the contrary, CONTRACTOR shall not be relieved of liability to the COUNTY for damages sustained by the COUNTY by virtue of any breach of the Contract by CONTRACTOR and the COUNTY may withhold any payments to CONTRACTOR for the purpose of setoff until such time as the exact amount of damages due the COUNTY from CONTRACTOR is determined.

e. The COUNTY has the option to cancel the Agreement and/or any Renewals if the County is put on notice of legal
problems with CONTRACTOR or any of its principals, partners, corporate officers, or agents, involving allegations of dishonesty, improper business conduct, or criminal activity. Cancellation under this provision shall be immediate and effective upon notice. The COUNTY reserves the right to exercise this provision at its discretion and any decision rendered by the COUNTY under this provision constitutes a final determination of the matter the public welfare requiring it.

6. COMPENSATION FOR CORRECTIONS

No compensation shall be due or payable to CONTRACTOR pursuant to this Contract for any CONTRACTOR’s Services performed by the CONTRACTOR in connection with effecting of corrections to the design of the Services, when such corrections are required as a direct result of negligence by the CONTRACTOR to properly fulfill any of his obligations as set forth in this Contract.

7. SUBCONTRACTING, ASSIGNMENT OR TRANSFER

a. Any subcontracting, assignment, delegation or transfer of all or part of the rights, responsibilities, or interest of either party to this Contract is prohibited unless by written consent of the other party. No subcontracting, assignment, delegation or transfer shall relieve the CONTRACTOR from performance of the Services under this Contract. The COUNTY shall not be responsible for the fulfillment of the CONTRACTOR's obligations to its transferors or subcontractors.

b. Upon the request of the other party, the subcontracting, assigning, delegating or transferring party shall provide all documents evidencing the subcontract, assignment, delegation or transfer.

8. CONFLICT OF INTEREST

The CONTRACTOR covenants that it has no public or private interest, and will not acquire directly or indirectly any interest which would conflict in any manner with the performance of the Services. The CONTRACTOR warrants that no part of the total Contract Fee shall be paid directly or indirectly to any officer or employee of the COUNTY as wages, compensation, or gifts in exchange for acting as officer, agent, employee, subcontractor or contractor to the CONTRACTOR in connection with any work contemplated or performed relative to this Contract.

9. CONTINGENT FEES
The CONTRACTOR warrants that it has not employed or retained any company or person other than a bona fide employee working solely for the CONTRACTOR, to solicit or secure this Contract, and that it has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the CONTRACTOR any fee, commission, percentage, brokerage fee, gift, or any other consideration contingent upon or resulting from the award or making of this Contract. For breach or violation of this warranty, the COUNTY will have the right to recover the full amount of such fee, commission, percentage, brokerage fee, gift, or other consideration.

10. **EMPLOYMENT OF COUNTY WORKERS**

The CONTRACTOR will not engage, on a full, part-time, or any other basis during the Term of the Contract, any professional or technical personnel who are or have been at any time during the Term of the Contract in the employ of the COUNTY.

11. **ACCESS TO RECORDS**

During all phases of the work and Services to be provided hereunder, CONTRACTOR agrees to permit duly authorized agents and employees of the COUNTY to enter CONTRACTOR's offices for the purpose of inspections, reviews and audits during normal working hours. Reviews may also be accomplished at meetings that are arranged at mutually agreeable times and places. The CONTRACTOR will maintain all books, documents, papers, accounting records, and other evidence pertaining to the Fee paid under this Contract and make such materials available at their offices at all reasonable times during the Term of this Contract and for three (3) years from the date of payment under this Contract for inspection by the COUNTY or by any other governmental entity or agency participating in the funding of this Contract, or any authorized agents thereof. Copies of said records shall be furnished to the COUNTY upon request.

12. **ARBITRATION**

Any dispute concerning a question of fact in connection with the work not disposed of by agreement between the CONTRACTOR and the COUNTY will be referred to the Shelby County Contract Administrator or its duly authorized representative, whose decision regarding same will be final.

13. **RESPONSIBILITIES FOR CLAIMS AND LIABILITIES**
a. CONTRACTOR shall indemnify, defend, save and hold harmless the COUNTY, and its elected officials, officers, employees, agents, assigns, and instrumentalities from and against any and all claims, liability, losses or damages—including but not limited to Title VII and 42 USC 1983 prohibited acts—arising out of or resulting from any conduct; whether actions or omissions; whether intentional, unintentional, or negligent; whether legal or illegal; or otherwise that occur in connection with or in breach of this Contract or in the performance of the Services hereunder, whether performed by the CONTRACTOR its subcontractors, agents, employees or assigns. This indemnification shall survive the termination or conclusion of this Contract.

b. CONTRACTOR expressly understands and agrees that any insurance protection required by this Contract or otherwise provided by the CONTRACTOR shall in no way limit the responsibility to indemnify, defend, save and hold harmless the COUNTY or its elected officials, officers, employees, agents, assigns, and instrumentalities as herein provided.

c. The COUNTY has no obligation to provide legal counsel or defense to CONTRACTOR or its subcontractors in the event that a suit, claim or action of any character is brought by any person not a party to this agreement against CONTRACTOR as a result of or relating to performance of the Services under this Contract.

d. Except as expressly provided herein, the COUNTY has no obligation for the payment of any judgment or the settlement of any claims against CONTRACTOR as a result of or relating to performance of the Services under this Contract.

e. CONTRACTOR shall immediately notify the COUNTY of any claim or suit made or filed against CONTRACTOR or its subcontractors regarding any matter resulting from or relating to CONTRACTOR’s performance of the Services under this Contract and will cooperate, assist and consult with the COUNTY in the defense or investigation thereof.

14. GENERAL COMPLIANCE WITH LAWS

a. The CONTRACTOR certifies that it is qualified or will take steps necessary to qualify to do business in the State of Tennessee and that it will take such action as, from time to time, may be necessary to remain so
qualified and it shall obtain, at its expense all licenses, permits, insurance, and governmental approvals, if any, necessary to the performance of the Services under this Contract.

b. The CONTRACTOR is assumed to be familiar with and agrees that at all times it will observe and comply with all federal, state, and local laws, ordinances, and regulations in any manner affecting the performance of the Services. The preceding shall include, but is not limited to, compliance with all Equal Employment Opportunity laws, the Fair Labor Standards Act, Occupational Safety and Health Administration (OSHA) requirements, and the Americans with Disabilities Act (ADA).

c. This Contract will be interpreted in accordance with the laws of the State of Tennessee. By execution of this Contract, the CONTRACTOR agrees that all actions, whether sounding in contract or in tort, relating to the validity, construction, interpretation and enforcement of this Contract will be instituted and litigated in the courts of the State of Tennessee, located in Shelby County, Tennessee, and in no other. In accordance herewith, the parties to this Contract submit to the jurisdiction of the courts of the State of Tennessee located in Shelby County, Tennessee.

15. NON-DISCRIMINATION

The CONTRACTOR hereby agrees, warrants, and assures compliance with the provisions of Title VI and VII of the Civil Rights Act of 1964 and all other federal statutory laws which provide in whole or in part that no person shall be excluded from participation or be denied benefits of or be otherwise subjected to discrimination in the performance of this Contract or in the employment practices of the CONTRACTOR on the grounds of handicap and/or disability, age, race, color, religion, sex, national origin, or any other classification protected by federal, Tennessee State Constitutional or statutory law. The CONTRACTOR shall upon request show proof of such non-discrimination and shall post in conspicuous places available to all employees and applicants notices of non-discrimination.

16. ENTIRE AGREEMENT

This Contract represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations or agreements, whether oral or written.
17. **AMENDMENT**

This Contract may be modified or amended only by written instrument signed by both parties.

18. **SEVERABILITY**

If any provision of this Contract is held to be unlawful, invalid or unenforceable under any present or future laws, such provision shall be fully severable; and this Contract shall then be construed and enforced as if such unlawful, invalid or unenforceable provision had not been a part hereof. The remaining provisions of this Contract shall remain in full force and effect and shall not be affected by such unlawful, invalid or unenforceable provision or by its severance herefrom. Furthermore, in lieu of such unlawful, invalid, or unenforceable provision, there shall be added automatically as a part of this Contract a legal, valid and enforceable provision as similar in terms to such unlawful, invalid or unenforceable provision as possible.

19. **NO WAIVER OF CONTRACTUAL RIGHT**

No waiver of any term, condition, default, or breach of this Contract, or of any document executed pursuant hereto, shall be effective unless in writing and executed by the party making such waiver; and no such waiver shall operate as a waiver of either (a) such term, condition, default, or breach on any other occasion or (b) any other term, condition, default, or breach of this Contract or of such document. No delay or failure to enforce any provision in this Contract or in any document executed pursuant hereto shall operate as a waiver of such provision or any other provision herein or in any document related hereto. The enforcement by any party of any right or remedy it may have under this Contract or applicable law shall not be deemed an election of remedies or otherwise prevent such party from enforcement of one or more other remedies at any time.

20. **MATTERS TO BE DISREGARDED**

The titles of the several sections, subsections, and paragraphs set forth in this contract are inserted for convenience of reference only and shall be disregarded in construing or interpreting any of the provisions of this Contract.

21. **SUBJECT TO FUNDING**
This Contract is subject to annual appropriations of funds by the Shelby County Government. In the event sufficient funds for this Contract are not appropriated by Shelby County Government for any of its fiscal period during the Term hereof, then this Contract will be terminated. In the event of such termination, the CONTRACTOR shall be entitled to receive just and equitable compensation for any satisfactory work performed as of the Termination Date.

22. **TRAVEL EXPENSES**

If travel expenses are payable under this Contract, such shall be in accordance with the County Travel Policy and Procedures. This includes advance written travel authorization, submission of travel claims, documentation requirements, and reimbursement rates. No travel advances will be made by the County.

23. **NON-LIABILITY FOR CONTRACTOR EMPLOYEE TAXES**

Neither CONTRACTOR nor its personnel are COUNTY’s employees, and COUNTY shall not take any action or provide CONTRACTOR’s personnel with any benefits and shall have no liability for the following:

a. Withholding FICA (Social Security) from CONTRACTOR’s payments;

b. Making state or federal unemployment insurance contributions on behalf of CONTRACTOR or its personnel;

c. Withholding state and federal income tax from payment to CONTRACTOR;

d. Making disability insurance contributions on behalf of CONTRACTOR;

e. Obtaining workers’ compensation insurance on behalf of CONTRACTOR or CONTRACTOR’s personnel.

24. **INCORPORATION OF OTHER DOCUMENTS**

a. CONTRACTOR shall provide Services pursuant to this Contract in accordance with the terms and conditions set forth within the Shelby County Request for Quotations/Bids as well as the Response of CONTRACTOR thereto, all of which are maintained on file within the Shelby County Purchasing Department and incorporated herein by reference.
b. It is understood and agreed between the parties that in the event of a variance between the terms and conditions of this Contract and any amendment thereto and the terms and conditions contained either within the Request for Quotations/Bids or the Response thereto, the terms and conditions of this Contract as well as any amendment shall take precedence and control the relationship and understanding of the parties.

25. CONTRACTING WITH LOCALLY OWNED SMALL BUSINESSES (LOSBs) AND/OR MINORITY AND WOMEN OWNED BUSINESS ENTERPRISES (M/WBEs)

In accordance with Ordinance Nos. 471 and 472, the Contractor shall utilize LOSBs and/or M/WBEs as sources of supplies, equipment, construction, and services.

26. RIGHT TO REQUEST REMOVAL OF CONTRACTOR’s EMPLOYEES

The COUNTY may interview the personnel CONTRACTOR assigns to COUNTY’s work. COUNTY shall have the right, at any time, to request removal of any employee(s) of CONTRACTOR, whom COUNTY deems to be unsatisfactory for any reason. Upon such request, CONTRACTOR shall use all reasonable efforts to promptly replace such employee(s) with substitute employee(s) having appropriate skills and training.

27. INCORPORATION OF WHEREAS CLAUSES

The foregoing whereas clauses are hereby incorporated into this Contract and made a part hereof.

28. DISCLOSURE OF REPORTS, DATA OR OTHER INFORMATION

Notwithstanding anything to the contrary contained herein or within any other document supplied to COUNTY by CONTRACTOR, CONTRACTOR understands and acknowledges that COUNTY is a governmental entity subject to the laws of the State of Tennessee and that any reports, data or other information supplied to COUNTY by CONTRACTOR due to Services performed pursuant to this Contract is subject to being disclosed as a public record in accordance with the laws of the State of Tennessee.

29. ORGANIZATION STATUS AND AUTHORITY

a. CONTRACTOR represents and warrants that it is a corporation, limited liability company, partnership, or other entity duly organized, validly existing and in good
standing under the laws of the state of Tennessee; it has the power and authority to own its properties and assets and is duly qualified to carry on its business in every jurisdiction wherein such qualification is necessary.

b. The execution, delivery and performance of this Contract by the CONTRACTOR has been duly authorized by all requisite action and will not violate any provision of law, any order of any court or other agency of government, the organizational documents of CONTRACTOR, any provision of any indenture, agreement or other instrument to which CONTRACTOR is a party, or by which CONTRACTOR’s respective properties or assets are bound, or be in conflict with, result in a breach of, or constitute (with due notice or lapse of time or both) a default under any such indenture, agreement or other instrument, or result in the creation or imposition of any lien, charge or encumbrance of any nature whatsoever upon any of the properties or assets.

30. INSURANCE REQUIREMENTS

a. The CONTRACTOR shall purchase and maintain, in a company or companies licensed to do business in the State of Tennessee, such insurance as will protect the County from claims which may arise out of or result from the CONTRACTOR’s operations under the Contract, whether such operations are performed by himself or by any subcontractors or by anyone directly or indirectly employed by any of them, or by anyone for whose acts the CONTRACTOR or subcontractor may be liable.

b. The insurance required shall be written for not less than any limits of liability specified or required by law, whichever is greater. Shelby County Government, its elected officials, appointees and employees will be named as additional insured. All policies will provide for thirty (30) days written notice to COUNTY of cancellation or material change in coverage provided. If policy terms and conditions do not allow for notice to COUNTY, CONTRACTOR will immediately notify COUNTY and provide evidence of replacement coverage with no lapse. The CONTRACTOR will maintain throughout the life of this Contract insurance, through insurers rated A- or better by A.M. Best, in the following minimum requirements:

i) Commercial General Liability coverage with minimum limits of $1,000,000.00 per occurrence bodily injury and property damage/ $1,000,000.00 personal
and advertising injury/$2,000,000.00 general aggregate coverage, $2,000,000.00 annual aggregate products/completed operations, indicating whether coverage provided on a claims-made or on an occurrence basis. The insurance shall include coverage for the following:

a. Premises/Operation;
b. XCU coverage, where applicable
c. Products/Completed Operations;
d. Contractual Liability;
e. Independent Contractors;
f. Broad Form Property Coverage;
g. Personal Injury.

ii) Builders Risk and/or Installation Floater – Coverage to be applicable for the work being performed.

iii) Workers Compensation and Employers’ Liability Insurance – Workers’ compensation statutory limits as required by Tennessee. This policy should include Employers’ Liability coverage for $1,000,000.00 per accident.

iv) Business Automobile Liability Insurance – minimum limit of $1,000,000.00 each accident for property damage and personal injury. Coverage is to be provided on all owned/leased, hired and non-owned autos.

c. CONTRACTOR shall provide County with a current copy of the Certificate of Insurance at the time of contracting and shall maintain said insurance during the entire Contract period as well as provide renewal copies on each anniversary date. The certificate holder is to read:

Shelby County Government
Contract Administration – County Attorney’s Office
160 N. Main, Suite 950
Memphis, TN  38103

d. Upon termination or cancellation of any claims-made insurance currently in effect under this Contract, the CONTRACTOR shall purchase an extended reporting endorsement and furnish evidence of same to the County.

e. Any coverage applicable to COUNTY will apply as primary and non-contributory regardless of any insurance or self-
insurance maintained by the COUNTY.

31. NOTICE

Any notices required or permitted to be given under the provisions of this Contract shall be effective only if in writing and delivered either in person to the COUNTY’s authorized agent or by First Class or U.S. Mail to the addresses set forth below, or to such other person or address as either party may designate in writing and deliver as herein provided:

COUNTY:  Shelby County Division of Public Works
160 N. Main Street
Memphis, Tennessee  38103
Attn.: Tom Needham, Division Director

and

Shelby County Government
Contract Administration -
County Attorney’s Office
160 N. Main St., Suite 950
Memphis, Tennessee  38103

VENDOR: Name of Vendor
Contact Person/Attn:
Address
City/State/Zip

32. ORDER OF APPLICATION OF CONTRACT AND SUPPORTING EXHIBITS

In the event of a discrepancy or conflict between the terms of this Contract, the Request for Quotation (Exhibit A) and/or the Response to the Quotation (Exhibit B), the terms of this Contract shall control followed by the Request for Quotation (Exhibit A) and, lastly the Response to the Quotation (Exhibit B).

It is agreed that the following documents are made a part of an incorporated fully into this construction Contract:

A. Performance Bond
B. Labor and Material Bond
C. Insurance Certificate
D. Bid Specifications (RFP/RFQ#___________, Exhibit “A”)
E. Contractor’s Bid/Quotation (Exhibit “B”)
F. List of subcontractors who will be performing work on project with attached required information (Exhibit “C”)

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33. PERFORMANCE AND LABOR AND MATERIALS BONDS

CONTRACTOR will provide COUNTY within ten (10) days from inception date of this Contract a Performance and Labor Materials Bond each in the amount of 100% of the Contract price for each year that this contract is in effect. Said Bonds may be pro-rated for the initial year in the event that this period of time is less than full twelve (12) month period.

IN WITNESS WHEREOF, the parties hereto have set their signatures for the purposes contained herein, on the day and date first above written.

APPROVED AS TO FORM AND LEGALITY:

_________________________     __________________________
Contract Administration      Mark H. Luttrell, Jr. Mayor
Assistant County Attorney

(SHIELB COUNTY GOVERNMENT)

_________________________
(insert name of contractor/vendor)

BY: ______________________

TITLE: ____________________
CORPORATE ACKNOWLEDGMENT

STATE OF ______________

COUNTY OF ______________

Before me, the undersigned Notary Public, in and for the State and County aforesaid, personally appeared ____________, with whom I am personally acquainted or proved to me on the basis of satisfactory evidence, and who, upon oath, acknowledged himself/herself to be president or other officer authorized by appropriate Corporate action and/or Resolution to execute the preceding instrument of the ______________, the within named bargainor, a corporation, and that he as such ____________, executed the foregoing instrument for the purpose therein contained, by signing the name of the corporation by himself/herself as ______________.

WITNESS my hand and official seal at office this _____ day of __________, 20__. 

________________________________________
Notary Public

My Commission Expires: ________________
PART 1 GENERAL

1.01 SUMMARY

A. Requirements which govern the use of “Request for Information Form”.

1.02 REQUIREMENTS

A. Requests For Information (RFI) shall be submitted in writing.

B. All Requests For Information shall be submitted by the General Contractor.
   1. RFI’s directly from subcontractors are not acceptable.

C. RFI’s shall be numbered consecutively by the Contractor as submitted.

D. Submittal of an RFI constitutes representation that the Contractor requires additional information about the Contract Documents AFTER he has made careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior project correspondence or documentation.

E. If, upon evaluation of the RFI, the Architect finds that the requested information is contained in the Contract Documents or by other documents and/or methods as outlined in Paragraph “D”, the Owner has the option to obtain reimbursement from the Contractor for costs incurred by the Owner for the Architect’s services and expenses made necessary in answering such requests.

1.03 REQUESTS FOR INFORMATION

A. Each Request For Information Form shall be complete with data indicating the specific drawing(s) or specification(s) in need of clarification including the following:
   1. RFI number
   2. Date submitted
   3. Subject requiring clarification
   4. Discipline (Architectural, Structural, Mechanical, Electrical, etc.)
   5. Co-author, if applicable
   6. Detailed statement of the information requested
   7. Date information required

B. Requests For Information shall be made in a timely manner allowing the Architect a reasonable amount of time to review the request.
   1. If the date a response is required is not indicated, the assumed date the response is required shall be 15 working days from the date the Architect received the request.

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Scope of Work
B. Liquidated Damages
C. Contract Definitions
D. Contractor's and/or Subcontractor's General Duties
E. Contracts
F. Time of Substantial Completion
G. Contractor's Use of Adjacent Property
H. Owner Occupancy
I. Contractor's Use of Premises
J. Warranty
K. Owner Furnished and Installed Products
L. Owner Furnished and Contractor Installed Products
M. Sequence of Construction

1.02 RELATED REQUIREMENTS

A. Related Requirements in Other Parts of the Project Manual.
   1. Additional requirements of all parties to the Contract: General and Supplemental Conditions of the Contract.

1.03 CONTRACT DEFINITIONS

A. For the purposes of this document the following definitions of terms apply. These are treated as if singular in number and masculine in gender.
   1. OWNER: Shelby County Government and legally authorized representatives thereof.
   2. OWNER’S REPRESENTATIVE: Cliff Norville, Deputy Administrator Shelby County Support Services, 584 Adams Avenue, Memphis, TN 38104.
   3. ARCHITECT: The firm of Evans Taylor Foster Childress Architects, 343 North Main Street, Memphis, Tennessee 38103
   4. CONTRACTOR: The person or organization holding a direct contract with the "Owner" to execute any of the parts of work on this project and so identified in the Owner-Contractor Agreement covering that part of the Work and/or their authorized representative. Reference General Conditions Article 3.
   5. SUBCONTRACTOR: The person or organization holding a direct contract with a "Contractor" to perform work on that Contractor's portion of this work and/or their authorized representative. A Subcontractor will have no direct contractual relationship with the Owner. Reference General Conditions Article 5.
6. VENDOR OR SUPPLIER: A person or organization furnishing standard items not manufactured to a specific shape, size or kind specifically for this project, to a "Contractor" or "Subcontractor" for their part of this work. A "Vendor" or "Supplier" will have no contractual relationship with the Owner. Reference General Conditions Article 5.

1.04 SCOPE OF WORK

A. Base Bid: The Project Base Bid (Phase I) consists of the interior renovation of existing area within the CJC Administration Tower located at 201 Poplar Avenue, Memphis, TN., and as indicated on the drawings to include all work as required and associated in conjunction for the complete renovation of Floors 2 West and 11. The existing building is comprised of non-combustible, protected construction, fully sprinklered with this phase of the work having an approximate floor area of 37,152 square feet. The Contract Drawings more specifically locate and define this project base bid. Base Bid construction must be completed within Three Hundred Sixty (360) calendar days after beginning date of “Notice To Proceed” for this designated work. This work is anticipated to be approved by the Owner pending funding availability through a Base Bid Contract after January 2018.

B. Alternate Number 1: Project Alternate Number 1 (Phase II) consists of the interior renovation of existing area within the CJC Administration Tower located at 201 Poplar Avenue, Memphis, TN., and as indicated on the drawings to include all work as required and associated in conjunction for the complete renovation of Floors 3, 12 Northwest and the Upgrade and Modernization of the two (2) Public Escalators located from the First Floor to the Lower Level. The existing building is comprised of non-combustible, protected construction, fully sprinklered with this phase of the work having an approximate floor area of 28,768 square feet. The Contract Drawings more specifically locate and define this project alternate. Alternate Number 1 construction must be completed within Four Hundred Twenty (420) calendar days after beginning date of “Notice To Proceed” for this designated work. This work is anticipated to be approved by the Owner pending funding availability through a Change Order after July 2018.

C. Alternate Number 2: Project Alternate Number 2 (Phase III) consists of the interior renovation of existing area within the CJC Administration Tower located at 201 Poplar Avenue, Memphis, TN., and as indicated on the drawings to include all work as required and associated in conjunction for the complete renovation of Floors 4, Partial North Lower Level and 2 East. The existing building is comprised of non-combustible, protected construction, fully sprinklered with this phase of the work having an approximate floor area of 39,952 square feet. The Contract Drawings more specifically locate and define this project alternate. Alternate Number 2 construction must be completed within Four Hundred Twenty (420) calendar days after beginning date of “Notice To Proceed” for this designated work. This work is anticipated to be approved by the Owner pending funding availability through a Change Order after July 2019.

D. Alternate Number 3: Project Alternate Number 3 (Combined Pricing for Phases I, II & III – Base Bid and Alternates 1 & 2 above) consists of the interior renovation of existing area within the CJC Administration Tower located at 201 Poplar Avenue, Memphis, TN., and as indicated on the drawings to include all work as required and associated in conjunction for the complete renovation of Phases I, II & III in sequential order as noted above. The existing building is comprised of non-combustible, protected construction, fully sprinklered with this phase of the work having an approximate floor area of 105,872 square feet. The Contract Drawings more specifically locate and define this project alternate. Alternate Number 3 construction must be completed within One Thousand Eighty (1,080) calendar days after beginning date of “Notice To Proceed” for this designated work. This work is anticipated to be approved by the Owner pending funding availability through a Contract after January 2018.
1.05 LIQUIDATED DAMAGES

A. If the Contractor fails to substantially complete the Work for each Phase within the time constraints noted within these documents, a deduction will be made from the money due the Contractor from the Owner hereunder, not as a penalty, but as liquidated damages (hereinafter “Liquidated Damages”). For each calendar day after the substantial completion date that the Contractor fails to achieve substantial completion of the Work, the amount of Liquidated Damages shall be $500.00 per consecutive calendar day. As an additional stipulation to achieve substantial completion, the Contractor must obtain all final governmental inspections and occupancy approvals from all Authorities Having Jurisdiction (AHJ). In addition to the foregoing sum, the Contractor agrees to pay the Owner the sum of $500.00 per consecutive calendar day for each calendar day that the Contractor does not achieve final completion of the Project after thirty (30) days from the substantial completion date.

1.06 CONTRACTOR'S AND/OR SUBCONTRACTOR'S GENERAL DUTIES

A. Contractor and/or Subcontractors (as directly related to their portion of the work), except as specifically noted otherwise, shall provide and pay for:
   1. Labor, materials and equipment.
   2. Tools, construction equipment and machinery.
   3. Permanent water, heat and utilities required for this construction in addition to Temporary Utilities. (Reference Section 01 5000 and Division 22, 23 and 26.)
   4. Other facilities and services, permanent or temporary, necessary for proper execution and completion of Work.

B. Pay all legally required sales, use, social security, payroll consumer and/or other taxes.

C. Secure and pay for, as necessary, for proper execution and completion of his Work and as applicable at time of receipt of Bids:
   1. Permits
   2. Inspections
   3. Licenses

D. Give required notices.

E. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of Work.

F. Contractor, and/or Subcontractors through the Contractor, are to promptly submit written notice to Architect of observed variances of Contract Documents from legal requirements. The Building Codes used for this project are listed on the Drawings.

   Note: This project is to also comply with the Americans with Disabilities Act (ADA).

G. Enforce strict discipline and good order among employees. Do not employ on work:
   1. Unfit persons.
   2. Persons not skilled in assigned task.

1.07 CONTRACTS

A. Contracts for this project will be on the basis of a single "Lump Sum" General Construction Contract.
1.08 TIME OF SUBSTANTIAL COMPLETION

A. Construction of this project shall begin within ten (10) calendar days of the date of the written "Notice To Proceed" issued by the Architect upon written instructions by the Owner. Base Bid Project construction must be completed within Four Hundred Fifty (450) calendar days after beginning date of "Notice to Proceed", including all work designated as either general, mechanical, and/or electrical as applicable.

1.09 CONTRACTOR'S USE OF ADJACENT PROPERTY

A. No Contractor and/or Subcontractor on any operation on this project, may enter upon, use or in any way encumber the legal use of adjacent property by the Owners or legal tenants or cause unreasonable inconvenience to their use thereof without the written consent of such Owner or tenant delivered through the Owner.

1.10 OWNER OCCUPANCY

A. Occupancy By Owner Of Existing Building Spaces During Construction:
   1. The Owner will occupy Existing Building Spaces within and/or around the existing building during the completion of the Work required under this Contract for the conduct of his normal operations. The Contractor shall note that the Owner must remain operable at all times on a 24 hour basis and his operations shall not be interrupted or interfered with to the point that his operations shall cease because of construction.
   2. Contractor shall not disconnect or remove utilities serving existing portions of the building without the coordination and approval of the Owner or his authorized representative.
   3. Contractor shall at all times conduct his operations to insure the least inconvenience to the general public transacting normal business within and/or around the Existing Building Spaces.
   4. The Owner may request, thru the Architect, that renovated areas of the existing building receive concentrated work to complete them for his early occupancy. This shall be done through the Architect with consideration of sequencing and scheduling of the Work by the Contractor and his Subcontractors.
   5. Early occupancy of areas and the moving in of equipment by the Owner shall not be deemed to be acceptance of any Work performed nor shall it be deemed to be the equivalent of the filing a Notice of Completion of Any Work.
   6. The Contractor shall be held harmless by the Owner for any damage done to the Work by any early occupancy of the Owner.
   7. The appropriate Contractor and/or his Subcontractors as applicable, shall make available, in the areas occupied, any utility services, heating and cooling as are in condition to be put in operation at the time of early occupancy. All responsibility for said equipment shall remain with the Contractor and/or applicable Subcontractors while it is so operated. However, an itemized list of each piece of equipment so operated, with the date their operation commences, shall be made by the Contractor and certified by the Architect. This list shall be the basis for the commencement of guarantee period on the equipment being operated for the benefit of the Owner's early occupancy.
   8. Normal hours of work allowed:
      a. Contractor may work 24 hours per day for each day Monday through Sunday throughout the Contract Time, however, the Contractor is cautioned regarding loud construction activity and the sensitivity ongoing courtroom activity. It is requested that all noisy activity be performed from 7pm until 7am Monday thru Friday.
1.11 CONTRACTOR’S USE OF PREMISES

A. The Contract Documents define the Work requirements of this Contract. Contractor and all Subcontractors shall note above that the Owner must remain operable within the existing building.

B. Access to and security of the Existing Building must be maintained during the extent of this Contract. Job conditions in coordination with Owner and Architect will determine the exact access routes, however, this Contractor and all Subcontractors are advised that all necessary precautions must be taken to prevent interference with the Owner’s operation and security requirements. Contractor shall coordinate all work in this Contract which affects the Owner’s operation and security requirements with the Owner.

C. Contractor’s Designated Entrance/Exit into Building: The Loading Dock on the Lower Level on Washington Street (South side of Building).

D. Contractor’s Designated Path from Building Entrance to Construction Location(s): Loading Dock at Lower Level to Service Elevator (Elevator #14) up to 12th Floor, then Stair number 3 up to 13th Floor (Mechanical Penthouse).

E. Contractor will be issued Shelby County Facility Security Vendor’s Identification Badges. These badges will be required for all Contractor’s employees on site. The Shelby County Sheriff Department Homeland Security Department will conduct background checks on all Contractor’s employees for this project prior to the issuance of badges.

F. The Contractor’s Staging and Storage Area will be designated as the 13th Floor of the CJC (Mechanical Penthouse). In addition, space in the Lower Level Boiler Room will also be provided for Contractor’s Storage.

G. Contractors, Subcontractors and Workmen shall not trespass into existing finished and completed areas of the building without permission of the Owner.

H. Contractor and all Subcontractors shall use and maintain in clean condition, site access roads and/or routes as designated by the Owner and Architect. No other access shall be used for materials, vehicles, or men. Parking by or for Contractor’s workmen and/or their personal vehicles is to be determined and provided by the Contractor. Parking within other areas of the site will be permitted only during material unloading and must be removed quickly as they are unloaded and is to be coordinated with the Owner.

I. Confine operations at site to areas permitted by:
   1. Law
   2. Ordinances
   3. Permits
   4. Contract Documents with Contract "Work Limits"

J. Do not unreasonably encumber site with materials or equipment.
   Contractor shall limit his use of the premises for his Subcontractors, work and for storage per Section 01 5000, to allow for:
   1. Work By Other Contractors and/or Subcontractors
   2. Owner Occupancy
   3. Public Use

K. Do not load structure with weight that will endanger structure. Verify with Architect prior to placing materials and equipment.
L. Assume full responsibility for protection and safekeeping of products stored on premises.

M. Move any stored products under Contractor's and/or Subcontractors' control which interfere with the operations of the Owner as, if and when instructed by the Owner.

1.12 WARRANTY

A. All work under this Contract shall be warranted for a minimum of one (1) year from date set out below except where longer time period is specified elsewhere in this Project Manual and/or Specifications.

B. All warranties embraced in or required by any section of the Project Manual are subject to the terms of this heading "warranty", unless otherwise expressly agreed, in writing, by the parties of the appropriate Contract. When warranted work is found faulty, the Contractor, when notified by the Owner, must within 48 hours of notification:
   1. Place in satisfactory condition in every particular, any of the warranted work including that of his Subcontractors.
   2. Make good all damage to the work, grounds, equipment, the building or contents thereof when unsatisfactory condition or damage develops within the period stipulated by the warranty, and is due to the use of materials or workmanship which is inferior, defective, or not in accordance with the appropriate Contract.
   3. If this Contractor disturbs any work under another contract, he must restore such disturbed work to a condition satisfactory to the Architect and warrant such restored work. Upon the Contractor's failure to so proceed promptly to comply with the terms of any guarantee under this Contract or still running upon work executed by other Contractors, the Owner/Architect will have such work performed as he deems necessary to fulfill such warranties, and the Contractor shall promptly pay the Owner such sums as were expended so as to fulfill such warranty.

C. Upon a Contractor's failure to so proceed promptly to comply with the terms of any warranty under this Contract, the Owner may have such work performed as he deems necessary at the expense of the Contractor per Modifications to the General Conditions.

D. All warranties under this Contract, unless otherwise specifically agreed to in writing shall run from the date of the Certificate Of Substantial Completion as issued by the Architect for use by the Owner unless otherwise specifically identified on the Certificate aforementioned.

1.13 OWNER FURNISHED AND INSTALLED PRODUCTS (OFOI)

A. Owner Furnished and Owner Installed: (to include but not limited to the following):
   1. Room numbers, name plates and interior directional signage unless specifically denoted on the drawings.
   2. Staff and Public Telephone systems
   3. Televisions and Television systems
   4. Loose furniture, desks, chairs, tables, carts, file cabinets and other items of a similar portable nature unless otherwise denoted on the Drawings.
   5. Copy and fax machines
   7. Vending machines
   8. Modular furniture systems
   9. Entrance mats
   10. Radio and dispatching equipment and systems
   11. Storage room and closet shelving systems.
12. Chalkboards/markerboards/tackboards
13. Clocks and Clock systems
14. Sound systems unless denoted on the drawings

B. Owner's Responsibilities:
1. Purchase, handle, deliver, store, set, secure or attach in place at his own expense all items listed herein.
2. Will not interfere with the Contractor's and/or Subcontractors' work, but the Contractor and/or Subcontractors must cooperate with this work.
3. May install this equipment before or after completion of the project by the Contractor. He will not, however, install equipment requiring connection to utilities or other contract items at such time as to require the Contractor and Subcontractor to expend overtime labor.
4. Installation or storage of these items, by the Owner in any area, does not necessarily constitute acceptance of this area.
5. Make final utility and/or vent connections to his equipment, test balance, etc. as required to put equipment into operation.
6. Provide shop drawings and other related literature for all equipment which will affect the Contractor's and Subcontractors' work.

C. Contractor's Responsibilities:
1. Contractor will provide space, access, electric power, water, lights, etc. to the installers of this equipment as shown on the Contract Drawings or Specifications including work as required by his appropriate Subcontractors.
2. Review Shop Drawings, Product Data, etc. as necessary with the Owner to identify discrepancies or problems anticipated in use of the Product.
3. Cooperate with Owner and/or his installer in the installation of his equipment.
4. Contractor and/or his Subcontractors as appropriate to the work required will furnish and install all electric, water, air, vacuum, waste, exhaust, vents, etc. as shown and/or specified in Contract Documents for final connection by the Owner.

1.14 OWNER FURNISHED AND CONTRACTOR INSTALLED PRODUCTS (OFCI)

A. Products furnished and paid for by Owner and installed by this Contractor and/or his Subcontractors as applicable are not designated at this time.
1. Janitorial Equipment/Toilet Accessories as indicated within Division 10.

B. Owner's Responsibilities:
1. Arrange for and deliver necessary Shop Drawings, Product Data and Samples to the Contractor.
2. Arrange and pay for Product delivery to the site, in accordance with the Construction Schedule.
3. Deliver Supplier's bill of materials to Contractor.
4. Inspect deliveries jointly with Contractor.
5. Submit claims for transportation damage.
6. Arrange for replacement of damaged, defective or missing items.
7. Arrange for manufacturer's warranties, bonds, service, and inspections, as required.
8. The Owner's equipment supplier shall uncrate, assemble, erect and place into proper hook-up position all material under his contract. He shall also provide shop drawings for the hook-up of utilities by the Contractor.

C. Contractor's and/or his Subcontractors' (as applicable) Responsibilities:
1. Designate delivery date for each Product in the Construction Schedule.
2. Review Shop Drawings, Product Data and Samples for any discrepancies or problems anticipated in the use of the product.
3. Receive, unload and store at the site.
4. Promptly inspect products jointly with Owner, record shortages, damaged or defective items.
5. Handle products at the site, including uncrating and storage and disposing of crating.
6. Protect products from exposure to elements and from damage.
7. Assemble, install, connect, adjust and furnish electric, water, air, vacuum, waste, exhaust, vents, etc. as shown and/or specified in the Contract Documents. The Contractor shall furnish necessary traps, disconnect switches, isolation valves, conduit junction boxes, extensions of services necessary to make the equipment operational.
8. The Contractor shall include all OFCI work in the Building Permit.
9. Repair or replace items damaged by Contractor and/or Subcontractors.

1.15 SEQUENCE OF CONSTRUCTION

A. Contractor and/or Subcontractors as applicable are to construct the work in stages to accommodate the Owner’s use of the existing premises and to provide for public convenience during the construction period.

B. Coordinate the construction sequencing with the Owner’s representative. Do not close off public or operational use of the existing facility until completion of one stage of construction will provide alternative usage.

C. The following general sequencing is to be utilized and followed in the construction of this work:
   1. Once the Contractor has received the Notice to Proceed from the Owner, the Contractor can then begin to mobilize on site and begin work.
   2. Confirm written construction sequence schedule with the Owner and Architect. Coordinate with the Owner prior to beginning the work and maintain sequence to permit the orderly rearrangement of the Owner’s personnel.
   3. The above is to be used as a general guideline by the Contractor since the Owner must be aware of the construction schedule constraints. Contractor is expected to maintain adequate forces and supervision to permit simultaneous work in different areas as necessary to complete the work within the total time schedule. Within ten (10) days after Notice to Proceed, the Contractor is to establish an agreed sequence of construction complete with appropriate time frames and area identity. The Contractor is responsible for sequencing all work with the Owner.

1.16 CONSTRUCTION EMERGENCY PLAN

A. An emergency plan for the construction shall be made between the Owner, the Contractor and a member of Shelby County Emergency Services. The plan is recommended to include but not limited to:
   1. Emergency contacts for the construction site for hours of operation and afterhours.
   2. Plan of showing construction site and entrance for emergency vehicles to enter.

PART 2 - PRODUCTS
Not used

PART 3 - EXECUTION
Not used

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, applied to this Section.

1.02 SUMMARY

A. The Architect-Engineer, if requested, will provide the General Contractor with one (1) electronic copy of the Contract Document Drawings for distribution to subcontractors and suppliers as a convenience in the preparation of Shop Drawings. The cost for the electronic copy shall be as stated in Paragraph 1.2.B. The electronic copy will be provided electronically in Autocad 2013 format.

B. The Architect-Engineer shall be paid a service fee of fifty dollars ($50.00) for each sheet as requested by the General Contractor in accordance with the Agreement. This fee shall be paid by the General Contractor upon acceptance of the electronic copy.

1.03 REFERENCES

A. A copy of the Agreement is included at the end of this Section.

PART 2 – PRODUCTS (NOT APPLICABLE)

PART 3 – EXECUTION (NOT APPLICABLE)

END OF SECTION
Agreement Between Architect-Engineer of Record and Contractor for Transfer of Computer Aided Drafting (CAD) Files on Electronic Media

{Contractor’s Name}

At your request, Evans Taylor Foster Childress Architect, P.C. (ETFC) will provide electronic files for your convenience and use in the preparation of shop drawings related to Renovations to the Criminal Justice Center, Phases I, II & III subject to the following terms and conditions:

ETFC’s electronic files are compatible with: AUTOCAD 2016. ETFC makes no representation as to the compatibility of these files with your hardware or your software beyond the specified release of the referenced specifications.

Data contained on these electronic files is part of ETFC’s and the Owner’s instruments of service and shall not be copied for distribution to others or used by you or anyone else receiving this data through or from your for any purpose other than as a convenience in the preparation of shop drawings for the specific referenced project. Any other use or reuse by you or by others, will be at your sole risk and without liability or legal exposure to the Owner or ETFC. You agree to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against the Owner, ETFC, its officers, directors, employees, agents or subconsultants which may arise out of or in connection with your use of the electronic files.

Furthermore, you shall, to the fullest extent permitted by law, indemnify and hold harmless the Owner and ETFC from all claims, damages, losses and expenses, including attorney’s fees arising out of or resulting from your use of these electronic files.

These electronic files are not contract documents. Significant differences may exist between these electronic files and corresponding hard copy contract documents due to addenda, change orders or other revisions. The Owner and ETFC makes no representation regarding the accuracy or completeness of the electronic files you receive. In the event that a conflict arises between the signed contract documents prepared by ETFC and electronic files, the signed contract documents shall govern. You are responsible for determining if any conflict exists. By your use of these electronic files, you are not relieved of your duty to fully comply with the contract documents, including and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, verify field conditions and coordinate your work with that of other contractors for the project.

Because of the potential that the information presented on the electronic files could be modified, unintentionally or otherwise, ETFC and the Owner reserves the right to remove all indication of it’s or the Owner’s ownership and/or involvement from each electronic display.

As condition of sending you CAD electronic files, I would like you to sign this letter below, stating that as a representative of your firm, that you will abide by the same agreement.

ETFC will furnish you electronic files of the following drawing sheets: __________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

A service fee of $50.00 (fifty dollars) per sheet shall be charged. The total cost for these files is $____________. The electronic files will be forwarded after the full payment and signed agreement is received.
Under no circumstances shall delivery of the electronic files for use by you be deemed a sale by ETFC
and ETFC makes no warranties, either express or implied, of merchantability and fitness for any particular
purpose. In no event shall ETFC be liable for any loss of profit or any consequential damages.

__________________________________  _______________________________
Michael Childress, AIA, Principal    [Contractor]

__________________________________  _______________________________
[Date]         [Date]
PART 1  GENERAL

1.01  SECTION INCLUDES
   A. Products and installation for patching and extending work
   B. Transition and adjustments
   C. Repair of damaged surfaces, finishes and cleaning

1.02  QUALITY ASSURANCE
   A. Assign moving, removal, cutting and patching to trades qualified to perform work in a manner to
      cause least damage to each type of work, and provide means of returning surfaces to appearance of new work.
   B. Patch and extend existing work using skilled mechanics who are capable of matching existing quality of workmanship. Quality of patched or extended work shall be not less than that specified for new work.

PART 2  PRODUCTS

2.01  PRODUCTS FOR PATCHING AND EXTENDING WORK
   A. New Materials: As specified in product Sections; match existing products and work for patching and extending work.
   B. Type and Quality of Existing Products: Determine by inspection and testing products where necessary, referring to existing work as a standard. Presence of a product, finish, or type of work, requires that patching, extending, or matching shall be performed as necessary to make work complete and consistent with existing quality.
   C. Salvage sufficient quantities of cut or removed material to replace damaged work of existing construction when material is not readily obtainable on current market.
   D. Do not incorporate salvaged or used material in new construction except with permission of Designer.

PART 3  EXECUTION

3.01  EXAMINATION
   A. Verify that demolition is complete and areas are ready for installation of new work.
   B. Beginning of restoration work means acceptance of existing conditions.

3.02  PREPARATION
   A. Cut, move, or remove items as necessary for access to alterations and renovation work. Replace and restore at completion.
B. Remove unsuitable material not marked for salvage, such as abandoned furnishings, rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished work.

C. Remove debris and abandoned items and items serving no useful purpose, such as abandoned piping, conduit, and wiring from concealed and exposed spaces.

D. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.

E. Close openings in exterior surfaces to protect existing work and salvage items from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.

3.03 INSTALLATION

A. Coordinate work of alterations and renovations to expedite completion sequentially and to accommodate Owner occupancy.

B. Project: Complete in all respects including operational mechanical, plumbing, fire protection and electrical work.

C. Remove, cut, and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to specified condition.

D. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.

E. In addition to specified replacement of equipment and fixtures restore existing plumbing, heating, ventilation, air conditioning, and electrical systems to full operational condition.

F. Install products as specified in individual sections.

3.04 TRANSITIONS

A. Where new work abuts or aligns with existing, perform a smooth and even transition. Patched work to match existing adjacent work in texture and appearance.

B. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.

3.05 ADJUSTMENTS

A. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.

B. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition for Architect review.

C. Trim existing doors as necessary to clear new floor finish. Refinish trim as required.

D. Fit work at penetrations of surfaces as specified in Section 01 3900.
3.06 REPAIR OF DAMAGED SURFACES

A. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.

B. Repair substrate prior to patching finish.

3.07 FINISHES

A. Finished surfaces as specified in individual product sections.

B. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

C. Cut finish surfaces such as masonry, tile, plaster, or metals, by methods to terminate surfaces in a straight line at a natural point of division.

3.08 CLEANING

A. In addition to cleaning specified in Section 01 5000, clean Owner occupied areas of work.

B. Clean surfaces and remove surface finishes as needed to install new work and finishes.

C. Clean spillage, overspray and heavy collection of dust in Owner-occupied areas immediately.

D. At completion of work of each trade, clean area and make surfaces ready for work of successive trades.

E. At completion of alterations work in each area, provide final cleaning and return space to a condition suitable for use by Owner.

3.09 PROTECTION

A. Protect existing finishes, equipment, and adjacent work which are scheduled to remain, from damage.

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Cash Allowances
B. Unit Prices
C. Schedule of Values
D. Application for Payment
E. Change Procedures

1.02 RELATED REQUIREMENTS

A. Related Requirements in other parts of the Project Manual:
   1. Additional requirements of all parties to the Contract: General and Supplemental Conditions of the Contract.

1.03 CASH ALLOWANCES

A. To be included as a Lump Sum in Base Bid. Do not mark up Allowance in Base Bid. Contractor's labor, materials, equipment, overhead, profit and mark-up are included as part of the Allowance if used, unless noted otherwise.

B. The amount of each allowance includes:
   1. The cost of the Product to the Contractor.
   2. Delivery to the site.
   3. Applicable taxes, if any.
   4. Handling at the site: including unloading, uncrating and storage.
   5. Protection from the elements and from damage.
   7. Other expenses required to complete the installation.
   8. Contractor's overhead and profit.

C. Architect's Duties:
   1. Consult with the Contractor in consideration of Products and Suppliers.
   2. Design and make selection in consultation with the Owner. Obtain Owner's written decision, designating:
      a. Product, model, finish and accessories.
      b. Supplier and installer as applicable.
      c. Cost to Contractor, delivered to the site or installed, as applicable.
   3. Transmit Owner's decision to the Contractor.

D. Contractor's Duties:
   1. Assist Architect and Owner in determining qualified suppliers or installers.
   2. Obtain proposals from suppliers and installers when requested by Architect.
   3. Make appropriate recommendations for consideration of Architect.
   4. Determine and advise Architect of any effect in the Construction Schedule anticipated by selections under consideration.
   5. On notification of selection, execute purchase agreement with designated supplier.
6. Arrange for and process Shop Drawings, Product Data and Samples, as required.
7. Make all arrangement for delivery and promptly inspect products for damage or defects.
8. Install product in compliance with requirements of referenced specification sections.

E. Funds will be drawn from Cash Allowances only by Change Order. Written Change Orders will be prepared, issued and signed before any money is allocated from the allowances. Any amount of remaining allowances shall be credited in its entirety to the Owner by Change Order at the completion of the project.

F. Base Bid Cash Allowances:

1. General Construction Contingency Allowance: The Contractor shall include in his Base Bid an amount of $325,000.00 (Three Hundred Twenty-Five Thousand and no/100 dollars) shall be used by the Owner to cover the cost of Owner’s Scope Changes or unforeseen conditions during this project. Written construction changes will be prepared, issued and signed before any is allocated from this allowance. Any amount of remaining allowance dollars shall be credited in its entirety to the Owner by change order at the completion of the project. Contractor’s labor, material, equipment, overhead, profit and mark-up are included as part of the allowance if used.

2. Spray-On Fireproofing Allowance: The Contractor shall include in his Base Bid an amount of $10,000.00 (Ten Thousand and no/100 dollars) shall be used by the Owner to cover the cost of any spray-on fireproofing repair work during this project. Written construction changes will be prepared, issued and signed before any is allocated from this allowance. Any amount of remaining allowance dollars shall be credited in its entirety to the Owner by change order at the completion of the project. Contractor’s labor, material, equipment, overhead, profit and mark-up are included as part of the allowance if used.

G. Alternate Number 1 Cash Allowances:

1. General Construction Contingency Allowance: The Contractor shall include in his Alternate Number 1 an amount of $275,000.00 (Two Hundred Seventy-Five Thousand and no/100 dollars) shall be used by the Owner to cover the cost of Owner’s Scope Changes or unforeseen conditions during this project. Written construction changes will be prepared, issued and signed before any is allocated from this allowance. Any amount of remaining allowance dollars shall be credited in its entirety to the Owner by change order at the completion of the project. Contractor’s labor, material, equipment, overhead, profit and mark-up are included as part of the allowance if used.

2. Spray-On Fireproofing Allowance: The Contractor shall include in his Alternate Number 1 an amount of $10,000.00 (Ten Thousand and no/100 dollars) shall be used by the Owner to cover the cost of any spray-on fireproofing repair work during this project. Written construction changes will be prepared, issued and signed before any is allocated from this allowance. Any amount of remaining allowance dollars shall be credited in its entirety to the Owner by change order at the completion of the project. Contractor’s labor, material, equipment, overhead, profit and mark-up are included as part of the allowance if used.

H. Alternate Number 2 Cash Allowances:

1. General Construction Contingency Allowance: The Contractor shall include in his Alternate Number 2 an amount of $350,000.00 (Three Hundred Fifty Thousand and no/100 dollars) shall be used by the Owner to cover the cost of Owner’s Scope Changes or unforeseen conditions during this project. Written construction changes will be prepared, issued and signed before any is allocated from this allowance. Any amount of remaining allowance dollars shall be credited in its entirety to the Owner by change order at the completion of the project.
Contractor’s labor, material, equipment, overhead, profit and mark-up are included as part of the allowance if used.

2. Spray-On Fireproofing Allowance: The Contractor shall include in his Alternate Number 2 an amount of $10,000.00 (Ten Thousand and no/100 dollars) shall be used by the Owner to cover the cost of any spray-on fireproofing repair work during this project. Written construction changes will be prepared, issued and signed before any is allocated from this allowance. Any amount of remaining allowance dollars shall be credited in its entirety to the Owner by change order at the completion of the project. Contractor’s labor, material, equipment, overhead, profit and mark-up are included as part of the allowance if used.

I. Alternate Number 3 Cash Allowances:

1. General Construction Contingency Allowance: The Contractor shall include in his Alternate Number 3 an amount of $950,000.00 (Nine Hundred Fifty Thousand and no/100 dollars) shall be used by the Owner to cover the cost of Owner’s Scope Changes or unforeseen conditions during this project. Written construction changes will be prepared, issued and signed before any is allocated from this allowance. Any amount of remaining allowance dollars shall be credited in its entirety to the Owner by change order at the completion of the project. Contractor’s labor, material, equipment, overhead, profit and mark-up are included as part of the allowance if used.

2. Spray-On Fireproofing Allowance: The Contractor shall include in his Alternate Number 3 an amount of $30,000.00 (Thirty Thousand and no/100 dollars) shall be used by the Owner to cover the cost of any spray-on fireproofing repair work during this project. Written construction changes will be prepared, issued and signed before any is allocated from this allowance. Any amount of remaining allowance dollars shall be credited in its entirety to the Owner by change order at the completion of the project. Contractor’s labor, material, equipment, overhead, profit and mark-up are included as part of the allowance if used.

1.04 UNIT PRICES

A. Quantities:

1. Quantities and measurements indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Architect shall determine payment.

2. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit sum/prices contracted.

B. Payment:

1. Payment includes: Full compensation for all required labor, products, tools, equipment, plant, transportation, services, and incidentals; erection, application or installation of an item of the Work; overhead and profit.

2. Final payment for Work governed by unit prices will be made on the basis of actual measurements and quantities accepted by the Architect, multiplied by the unit sum/price for Work which is incorporated in or made necessary by the Work.

1.05 SCHEDULE OF VALUES

A. Submit itemized Schedule of Values on Typed AIA Document G702 and Continuation Sheet G703. Use additional Continuation Sheets as required.

B. Identify schedule with:

1. Name of Project and location.

2. Architect name and project number.
C. General Contractor is to submit to the Architect four (4) copies of Schedule of Values allocated to the various portions of the Work within fifteen (15) days after award of contract in accordance with General and Supplemental Conditions. Architect will review with Owner for agreement and return one (1) copy to the General Contractor and transmit one (1) copy to the Owner.

D. Schedule of Values for each trade or operation shall have an identifiable relationship with Construction Progress Schedule: Section 01 3000.

E. Schedule shall list the installed value of the component parts of the works in sufficient detail to serve as a basis for computing values for Application For Payment (Article 1.06) during construction. Round off dollar values to nearest dollar.

F. Follow generally the table of contents of this Project Manual as the format for listing component items. Identify each line item with the number and title of the respective major section of the specifications.

G. For each major line item list sub-values of major projects or operations under each item. Provide a separate listing for:
   1. Bonds
   2. Insurance Premiums
   3. Job Start-up or Mobilization
   4. Field Supervision and Layout
   5. General Contractor Profit/Overhead

H. For items on which progress payments will be requested for stored materials, break down the value into:
   1. The cost of materials, delivered, and unloaded.
   2. The total installed value.

I. The sum of all values listed in the Schedule shall equal the General Contractor's total Contract Sum.

1.06 APPLICATION FOR PAYMENT

A. Submit Applications For Payment To Architect in accord with the time frame established by General and Supplemental Conditions.

B. Submit each application typed on AIA Document G702, Application and Certificate For Payment and Continuation Sheets G703.

C. Provide itemized data on Continuation Sheet in format, schedule, line items and values as approved for Schedule of Values (Article 1.05 above).

D. Preparation of Application for each Progress Payment
   1. Application Form:
      a. Fill in all required information for identification of project as Schedule of Values.
      b. Complete all information, including that for Change Orders executed prior to the date of submittal of application.
      c. Fill in summary dollar values to agree with Continuation Sheet.
      d. Execute certification with a signature of contracting officer of the contract firm and notarization as indicated.
2. Continuation Sheets:
   a. Fill in total list of all scheduled component items of work with appropriate scheduled
dollar value in accord with Schedule of Values.
   b. Fill in the dollar value for each scheduled line item when work has been performed or
   products stored.
   c. List each Change Order executed prior to date of submission at the end of the
Continuation Sheet as for an original component item. Identify Change Order Numbers
and date.
3. Application for Payment Attachments:
   a. To each Application For Payment copy attach the following:
      1) Revised Construction Progress Schedule: Section 01 3000 with applicable support
data required.

E. Substantiating Data for Progress Payments
1. The General Contractor, beginning with the second Application For Payment, shall verify
that he has paid all Subcontractors and major material suppliers those respective amounts
representing all Work and material which have formed the basis of previous progress
payments.
2. Submit suitable information with a cover letter identifying:
   a. Project name.
   b. Application number and date.
   c. Detailed list of enclosures.
   d. For stored products or materials:
      1) Item number and identification as shown on application.
      2) Description of specified material and its stored location with appropriate insurance
data, etc. as required.
3. Submit one copy of data and cover letter for each copy of application.

F. Preparation of Application for Final Payment
1. Fill in Application Form as specified for progress payments.
2. Use Continuation Sheet for presenting the final statement of accounting as specified in
Section 01 7000 - Contract Close Out.

G. Submittal Procedure
1. Submit six (6) copies of Applications For Payment with all attachment data to Architect as
stipulated in Supplemental Conditions.
2. Upon review and approval of Application For Payment, Architect will transmit two (2) copies
to the Owner for payment with one copy to the General Contractor.

1.07 CHANGE ORDER PROCEDURES

A. The General Contractor shall prepare and submit to the Architect a letter identifying changes in
the contract scope and material for each change complete with detailed material and labor
breakdown, calculations or other data as necessary to support request for change approval.

B. On approval from the Owner, the Architect will prepare six (6) copies of Change Order typed on
AIA Document G701 modified to project signature requirements.

C. Signature of party signing the original Owner/Contractor Agreement Form will be required to sign
the Change Order in the following sequence:
   1. Change Order will be forwarded to the Contractor for his signature and return six (6) copies
to the Architect.
2. Upon receipt of signed Change Order from the Contractor, six (6) copies will be forwarded to the Owner for his signature. Owner will retain three copies and return three (3) signed copies to the Architect.

3. Architect will retain one copy and forward one copy to the Contractor.

D. Change Orders must be signed by the Owner and Architect prior to inclusion under monthly Application For Payment. See Article 1.06 of this Section.

E. Project Record Data:
   1. All Change Orders are to become a part of the Project Record Data, Section 01 7200. One (1) copy shall be kept at the project site as a part of the permanent records.

PART 2 - PRODUCTS
Not used

PART 3 - EXECUTION
Not used

END OF SECTION
PART 1  GENERAL

1.01  SECTION INCLUDES
   A. List of unit prices, for use in preparing Bids.
   B. Measurement and payment criteria applicable to Work performed under a unit price payment method.
   C. Defect assessment and non-payment for rejected work.

1.02  COSTS INCLUDED
   A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.03  MEASUREMENT OF QUANTITIES
   A. Take all measurements and compute quantities. Measurements and quantities will be verified by Architect.
   B. Assist by providing necessary equipment, workers, and survey personnel as required.
   C. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
   D. Measurement by Area: Measured by square dimension using mean length and width or radius.
   E. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
   F. Stipulated Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

1.04  PAYMENT
   A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.

1.05  DEFECT ASSESSMENT
   A. Replace Work, or portions of the Work, not conforming to specified requirements.

1.06  SCHEDULE OF UNIT PRICES
   A. Unit Price Number 1: Sprayed-On Fireproofing; Section 07 8150

PART 2  PRODUCTS - NOT USED

PART 3  EXECUTION - NOT USED

END OF SECTION
PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnishing of and paying for all labor, materials, services, equipment, and appliances required for execution, installation and completion of all work for all alternates specified herein and shown on the drawings.

1.02 SECTION INCLUDES

A. Submission procedures

B. Documentation of changes to Contract Sum/Price and Contract Time

1.03 RELATED REQUIREMENTS

A. Related Requirements in Other Parts of the Project Manual:
   1. Additional requirements of all Parties to the Contract: General and Supplemental Conditions of the Contract.

1.04 REQUIREMENTS

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement. Offer Alternates only if requested by the Contract Documents.

B. Offer alternates only as requested by Article 1.06, Schedule of Alternates.

C. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.05 ALTERNATES AS LISTED ON BID FORM

A. Indicate variation of Bid Price for Alternates described below and list in Bid Form Document or any supplement to it, which requests a "difference" in Bid Price by adding to or deducting from the base bid price.

1.06 SCHEDULE OF ALTERNATES

A. Alternate Number 1: Project Alternate Number 1 (Phase II) consists of the interior renovation of existing area within the CJC Administration Tower located at 201 Poplar Avenue, Memphis, TN., and as indicated on the drawings to include all work as required and associated in conjunction for the complete renovation of Floors 3, 12 Northwest and the Upgrade and Modernization of the two (2) Public Escalators located from the First Floor to the Lower Level. The existing building is comprised of non-combustible, protected construction, fully sprinklered with this phase of the work having an approximate floor area of 28,768 square feet. The Contract Drawings more specifically locate and define this project alternate. Alternate Number 1 construction must be completed within Four Hundred Twenty (420) calendar days after beginning date of "Notice To Proceed" for this designated work. This work is anticipated to be approved by the Owner pending funding availability through a Change Order after July 2018.

B. Alternate Number 2: Project Alternate Number 2 (Phase III) consists of the interior renovation of existing area within the CJC Administration Tower located at 201 Poplar Avenue, Memphis, TN.,
and as indicated on the drawings to include all work as required and associated in conjunction for the complete renovation of Floors 4, Partial North Lower Level and 2 East. The existing building is comprised of non-combustible, protected construction, fully sprinklered with this phase of the work having an approximate floor area of 39,952 square feet. The Contract Drawings more specifically locate and define this project alternate. Alternate Number 2 construction must be completed within Four Hundred Twenty (420) calendar days after beginning date of “Notice To Proceed” for this designated work. This work is anticipated to be approved by the Owner pending funding availability through a Change Order after July 2019.

C. Alternate Number 3: Project Alternate Number 3 (Combined Pricing for Phases I, II & III – Base Bid and Alternates 1 & 2 above) consists of the interior renovation of existing area within the CJC Administration Tower located at 201 Poplar Avenue, Memphis, TN., and as indicated on the drawings to include all work as required and associated in conjunction for the complete renovation of Phases I, II & III in sequential order as noted above. The existing building is comprised of non-combustible, protected construction, fully sprinklered with this phase of the work having an approximate floor area of 105,872 square feet. The Contract Drawings more specifically locate and define this project alternate. Alternate Number 3 construction must be completed within One Thousand Eighty (1,080) calendar days after beginning date of “Notice To Proceed” for this designated work. This work is anticipated to be approved by the Owner pending funding availability through a Contract after January 2018.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Submittal Procedures
B. Electronic Document Submittal Service
C. Construction Progress Schedules
D. Proposed Products List
E. Shop Drawings
F. Product Data
G. Samples
H. Manufacturers' Instructions
I. Manufacturers' Certificates
J. Applicator or Installer's Certification

1.02 RELATED REQUIREMENTS IN OTHER PARTS OF THE PROJECT MANUAL

A. General and Supplemental Conditions of the Contract

1.03 CONTRACTOR RESPONSIBILITIES

A. The Contractor, or any Subcontractor, as applicable to his submittals, shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data or Samples unless the Contractor and Subcontractor have specifically informed the Architect, in writing, of such deviation at the time of submission and the Architect has given written approval to the specific deviation. The Contractor or any Subcontractor, as applicable to his submittals, shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data or samples by the Architect's approval thereof. The Architect's approval of a separate item shall not indicate approval of an assembly in which the item functions.

B. Provide originals or first generation copies for product data and "cut sheets".

1.05 SUBMITTAL PROCEDURES

A. Transmit each submittal with Architect accepted form.

B. Sequentially number the transmittal forms. Resubmittals to have original number with an alphabetic suffix.

C. Identify Project, Contractor, Subcontractor or Supplier; pertinent drawing sheet and detail number(s), and specification section number, as appropriate.
D. Apply Contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.

E. Schedule submittals to expedite the project and deliver to Architect. Coordinate submission of related items.

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

G. Provide 8 inch x 3 inch blank space for Contractor and Architect review stamps.

H. Contractor/Subcontractor resubmission requirements:
   1. Make any corrections or changes in the submittals required by the Architect and resubmit until approved. "Field Copy" of Shop Drawings without Architect's stamp will be removed from the Project Site.
   2. Shop Drawings and Product Data:
      a. Revise initial drawings or data, and resubmit as specified for the initial submittal.
      b. Indicate any changes which have been made other than those requested by the Architect.
   3. Samples: Submit new samples as required for initial submittal if rejected by initial submittal.

I. Distribution:
   1. The General Contractor shall distribute (without additional cost to the Owner) reproductions of Transparencies and copies of Product Data which carry the Architect's stamp of review and/or approval to:
      b. Record Documents file.
      c. Other affected contractors.
      d. Subcontractors as applicable.
      e. Supplier or Fabricator as applicable.
   2. Distribute samples which carry the Architect's stamp of approval as directed by the Architect.

1.06 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF) format and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
   1. Besides submittals for review, information, and closeout, this procedure applies to requests for information (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
   2. Contractor, Architect, Consultants and Owner are required to use this service.
   3. It is Contractor's responsibility to submit documents in PDF format.
   4. Subcontractors, suppliers, and Architect's consultants are to be permitted to use the service at no extra charge.
   5. Users of the service need an email address, Internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
6. Paper document transmittals will not be reviewed; emailed PDF documents will not be reviewed.
7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

B. Cost: The cost of the service is to be paid by Contractor; include the cost of the service in the contract sum.

C. Submittal Service: The selected service is:

D. Training: One, one-hour, web-based training session will be arranged for all participants, with representatives of Architect, Contractor, Consultants and Owner participating; further training is the responsibility of the user of the service.

E. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

1.07 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial progress schedule in triplicate within fifteen (15) days after date established in Notice to Proceed for Owner’s and Architect's review.

B. Owner and Architect will review schedules and return review copy within ten (10) days after receipt.

C. If required, resubmit within seven (7) days after return of review copy.

D. Submit revised schedules with each Application For Payment, identifying changes since previous version.

E. Submit schedules in the form of a horizontal bar chart.
   1. Provide separate horizontal bar for each trade or operation with an identifiable relationship between each Progress Schedule and Schedule of Values (Section 01 2100).
   2. Horizontal time scale: Identify the first work day of each week.
   3. Scale and spacing: Suitable size and scale to allow space for notations.
   4. All schedules shall indicate project name.
   5. All schedules shall directly relate to Time of Substantial Completion as identified in Summary of Work (Section 01 1000).

F. Content of Schedules:
   1. Construction Progress Schedule:
      a. Show the complete sequence of construction by activity with trades and dates required to meet the Substantial Completion Schedule.
      b. Show the dates for the beginning and completion of each major element of construction.
      c. Show projected percentage of completion for each item as of the first day of each week for full construction period. Identify relationship with Schedule of Values.
      d. Indicate critical or important materials and length of time after award of the Construction Contract when such materials will be required at the site.
   2. Submittals schedule for Shop Drawings, Product Data and Samples. Show:
      a. The dates for Contractor's and Subcontractor's submittals.
      b. The dates products submittals will be required for Owner-furnished products.
   3. Products Delivery Schedule. Show the delivery dates for:
      a. Products furnished by the Owner, Section 01 1000.
b. Products specified under Allowances, Section 01 2100.

G. Progress Revisions:
1. Indicate progress of each activity to date of submission.
2. Show changes occurring since previous submission of schedule:
   a. Major changes in scope.
   b. Activities modified since previous submission.
   c. Revised projections of progress within completion time frame.
   d. Other identifiable changes.
3. Provide a narrative report as needed to define:
   a. Problem areas, anticipated delays, and the impact on the schedule.
   b. Corrective action initiated to complete the total project within completion time frame should progress revisions indicate a completion delay.

H. Distribute without additional cost to the Owner, copies of the reviewed schedules to:
1. Job site file
2. Subcontractors as applicable

I. Instruct recipients to report promptly to Contractor, in writing, any problems anticipated by the projections shown in the schedules.

1.08 PROPOSED PRODUCTS LIST

A. Within fifteen (15) days after date of Owner-Contractor Agreement, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.09 SHOP DRAWINGS

A. Definitions:
1. Shop Drawings are drawings, diagrams, schedules and other data specifically prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier or distributor or illustrate some portion of the Work.
2. Drawings shall be presented in a clear and thorough manner in appropriate size and scale with details, identified by reference to sheet and detail, schedule or room numbers shown on Contract Drawings.

B. Submit six (6) reproductions of required shop drawings. Architect/Engineer will retain two (2) reproductions and return three (3) copies to Contractor.

C. After review, distribute in accordance with article on Procedures (1.05) above and for Record Documents described in Section 01 7200 PROJECT RECORD DOCUMENTS.

1.10 PRODUCT DATA

A. Definitions:
1. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor or any Subcontractor to illustrate a material, product or system for some portion of the Work.
2. Preparation:
   a. Clearly mark each copy to identify pertinent products or models.
b. Show performance characteristics and capacities.
c. Show dimensions and clearances required.
d. Show wiring or piping diagrams and controls.
3. Manufacturer's standard schematic drawings and diagrams:
   a. Modify drawings and diagrams to delete information which is not applicable to the Work.
   b. Supplement standard information to provide information specifically applicable to the Work.

B. Submit the number of copies which the Contractor requires, plus two (2) copies which will be retained by the Architect/Engineer.

C. After review, distribute in accordance with Article on Procedures (1.05) above and provide copies for Record Documents described in Section 01 7200 PROJECT RECORD DOCUMENTS.

1.11 SAMPLES

A. Definitions:
   1. Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the work will be judged.

B. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

C. Submit samples of finishes from the full range of manufacturers' standard colors in custom colors selected, textures, and patterns for Architect's selection.

D. Include identification on each sample, with full project information.

E. Submit the number or samples specified in individual specification sections; two (2) of which will be retained by Architect/Engineer.

F. Reviewed samples which may be used in the Work are indicated in individual specification sections.

1.12 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, retain at the project site one (1) copy of manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.

B. Identify conflicts between manufacturers' instructions and Contract Documents, if any exist.

1.13 MANUFACTURER'S CERTIFICATES

A. When specified in individual specification sections, submit manufacturers' certificate to Architect for review, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference date, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
1.14 Applicator or Installer's Certification:

A. When specified in individual specification sections under Article entitled "Qualification" that the applicator or installer is certified approved by the manufacturer for the product specified.

1.15 Submittal Schedule:

A. All submittals, including shop drawings, product data, samples, manufacturer's instructions, and manufacturer's certificates must be delivered to the Architect for review within ninety (90) days after date of Owner-Contractor Agreement.

PART 2 - PRODUCTS
Not used

PART 3 - EXECUTION
Not used

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Contractor Project Coordinator

B. Contractor Coordination Schedule

C. Field Engineering and Layout

D. Alteration Project Procedures

E. Cutting and Patching

F. Project Meetings:
   1. Preconstruction Conference
   2. Progress Meetings
   3. Preinstallation Conference

1.02 RELATED REQUIREMENTS

A. Related Requirements in other parts of the Project Manual:
   1. Additional requirements of all parties to the Contract: General and Supplemental Conditions of the Contract.

1.03 CONTRACTOR PROJECT COORDINATOR

A. General Contractor is to employ the services of a qualified Coordinator at the project site for the duration of this Work with his sole duties allocated to this project only. Coordinator may be the non-working superintendent required by General Conditions and must coordinate all phases of the work. Subcontractors are required to provide a working foreman who will serve as his coordinator to the General Contractor.

   1. Qualifications: Must have prior construction experience on successful projects within the last five (5) years. A listing of projects with references will be required for review.
   2. Submit name, address and qualifications to the Architect.

B. Coordinator Duties:
   1. Coordinate his work with the Owner, all Subcontractors and all other Contractors:
      a. For temporary utilities.
      b. With the work of trades specified in Divisions 2 thru 33.
      c. Throughout this work, it will be required that the Contractor and/or Subcontractors apply their material to or over work, either existing or done by others, and which would affect his work. The coordination of all such work is the responsibility of this Coordinator. However, it is the responsibility of each Contractor, Subcontractor or Supplier to comply with this Section and 01 6000 whether or not it is specifically required, by repeating in his particular section of these specifications.
   2. Coordinate his schedule with the Owner, all Contractors and/or Subcontractors.
      a. Verify timely deliveries of products for installation by his forces or by other trades.
      b. Verify that labor and materials are adequate to maintain construction schedules.
   3. All Contractors and/or Subcontractors receiving items from other Contractors and/or Subcontractors for installation in his work, as specified or as required, shall at his expense, do the following:
a. Receive, unload, transport, store, protect and install.
b. Inspect all items, at time of receiving from carrier, for all damage, concealed or otherwise.
c. Record with the Contractor the receiving of all items and report any damage immediately after receiving. Failure to do so will make the receiving Contractor and/or Subcontractor responsible for damage, late shipment, short shipment, etc.

4. All Contractors and/or Subcontractors furnishing items to other Contractors and/or Subcontractors for installation shall:
   a. Properly schedule delivery with using Contractor and/or Subcontractor.
   b. Deliver at such time and sequence as necessary to not delay the work of the installing Contractor, other Subcontractors or the overall job schedule.
   c. Furnish at proper time to meet 4.b above, all instruction and/or drawings necessary for installation and if necessary, his personnel at the job site or installation point, for instruction or supervision.
   d. Periodically inspect the installation with his personnel at the job site or installation point for conformity to his needs. Report to Contractor any discrepancies.
   e. Deliver all items F.O.B. job site or point of installation.

5. Conduct conferences among his Subcontractors and other concerned parties as necessary to:
   a. Maintain coordination and schedules.
   b. Resolve matters in dispute.
   c. Contractor to record minutes of all meetings.

6. Participate in Project Meetings:
   a. Report his progress and his Subcontractors' progress.
   b. Recommend needed changes in schedules.
   c. Contractor to record minutes of all meetings.

7. Temporary Utilities:
   a. Coordinate installation, operation and maintenance, to verify compliance with Project requirements and with Contract Documents.
   b. Verify adequacy of service and maintenance at required locations.

8. Shop Drawings, Product Data and Samples:
   a. Prior to submittal, review for compliance with Contract Documents.
      1) Check field dimensions and clearance dimensions.
      2) Check relation to available space.
      3) Check anchor bolt settings.
      4) Review the effect of any changes on the work of other contracts or trades.
      5) Check compatibility and space requirements with equipment, materials and/or finishes and work of other trades.
      6) Check motor voltages, control characteristics, controls, interlocks, wiring and control diagrams.

9. Coordination Drawings:
   a. Prepare one (1) coordinated drawing, to assure coordination of work of, or affected by ceiling work, plumbing, sprinkler, mechanical and electrical, or to resolve conflicts.
   b. Reproduce and distribute reviewed copies of all concerned parties.

10. Verify that his Contractor and his Subcontractor maintain accurate Record Documents.

11. Substitutions and Changes:
   a. Review proposals and requests:
      1) Check for compliance with Contract Documents.
      2) Verify compatibility with work and equipment of other trades.
   b. Recommend action to Contractor, Architect and/or Owner as applicable.

12. Observe Work for compliance with requirements of Contract Documents:
   a. Maintain list of observed deficiencies and discrepancies.
   b. Promptly report deficiencies or discrepancies to Architect.
13. Assemble documentation for handling of claims or disputes involving the various work trades.

14. Equipment Startup:
   a. Check to assure that utilities and specified connections are complete and that equipment is in operable condition.
   b. Observe test, adjust and balance.
   c. Record results, including time and date of startup and promptly report same to Contractor and Architect.

15. Inspection of Materials and Equipment:
   a. Prior to inspection, check that equipment and materials are clean, repainted as required, tested and operational.
   b. Assist inspector; prepare list of items to be completed or corrected.

16. Assemble Record Documents and transmit to Architect in complete form. Do not send data that is not complete covering all items.

17. Verify and be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

18. Coordinate scheduling, submittals, and work of the various sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

19. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

20. In finished areas, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

1.04 CONTRACTOR’S COORDINATION SCHEDULE

A. The Coordination Schedule designates areas of basic responsibility of Contractors and Subcontractors for items of work but does not define scope.

B. Refer to the respective sections of specifications for detailed descriptions of work required.

C. Coordinator:
   1. Maintain Coordination Schedule throughout construction period. Record changes in responsibilities due to:
      a. Modifications to Contract.
      b. Field Orders.
      c. Delays beyond control of Contractor.
   2. Reproduce and distribute revised Schedule promptly after each change to the Contractors, Subcontractors and one (1) copy to the Architect.

1.05 FIELD ENGINEERING AND LAYOUT

A. General Contractor is to provide and pay for field engineering layout services as required for this Work.
   1. Survey or layout work required in execution of the Project.
   2. Civil, structural or other professional services required to execute construction methods.

B. Qualifications of Layout Coordinator, Surveyor or Professional:
   1. Experienced in field layout work of the type required for this project.
   2. Submit name, address and qualifications to Architect.
C. Survey and Layout Reference Points:
   1. The Contract Drawings indicate the principal exterior wall line and vertical control points for this project.

D. Project Survey and Layout Requirements:
   1. Establish a minimum of two permanent bench marks on the site. Record locations, with horizontal and vertical data, on Project Record Documents.
   2. Establish lines and levels, locate and lay out, by instrumentation and/or similar appropriate means:
      a. Site improvements:
         1) Stakes for grading, fill and topsoil placement.
         2) Utility slopes and invert elevations.
      b. Batter boards for structures.
      c. Building foundation and floor levels.
   3. Establish base column lines on all floors conforming to the requirements of the Contract Documents and maintaining same control lines throughout layout to execute construction methods.

E. Records:
   1. Maintain a complete, accurate log of all control, layout and survey work as it progresses with documentation of discrepancies and solutions.

1.06 ALTERATION PROJECT PROCEDURES

A. Materials: As specified in product Sections, match existing products and work for patching and extending work.

B. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.

C. Remove, cut and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to original condition.

D. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.

E. Where new work abuts or aligns with existing, perform a smooth and even transition. Patched work to match existing adjacent work in texture and appearance.

F. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.

G. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition for Architect's review.

H. Patch or replace portions of existing surfaces which are damaged, lifted, discolored or showing other imperfections.

I. Finish surfaces as specified in individual product Sections.
1.07 CUTTING AND PATCHING

A. Description:
   1. General Contractor and/or Subcontractors, applicable to their portion of the Work, shall be
      responsible for all cutting, fitting and patching, including excavation and backfill, required to
      complete the Work or to:
      a. Make its several parts fit together properly.
      b. Uncover portions of the Work to provide for installation of ill-timed work.
      c. Remove and replace defective Work.
      d. Remove and replace Work not conforming to requirements of Contract Documents.
      e. Remove samples of installed Work as specified for testing.
      f. Provide routing penetrations of non-structural surfaces for installation of piping and
         electrical conduit.

B. Submittals:
   1. Submit a written request to Architect thru the General Contractor well in advance of
      executing any cutting or alteration which affects:
      a. The work of the Owner or any separate Contractor or Subcontractor.
      b. The structural value or integrity of any element of the Project.
      c. The integrity or effectiveness of weather-exposed or moisture resistant elements or
         system.
      d. The efficiency, operational life, maintenance or safety of operational elements.
      e. The visual qualities of sight-exposed elements.
   2. The request shall include:
      a. Identification of the Project.
      b. Description of the affected work.
      c. The necessity for cutting, alteration or excavation.
      d. The effect on the work of the Owner or any separate Contractor or Subcontractor, or the
         structural or weatherproof integrity of the Project.
      e. Description of the proposed work:
         1) The scope of cutting, patching, alteration, or excavation.
         2) The trades who will execute the work.
         3) Products proposed to be used.
         4) The extent or refinishing to be done.
      f. Alternatives to cutting and patching.
      g. Cost proposal, when applicable.
      h. Written permission of any separate Subcontractor whose work will be affected.
   3. Submit a written notice to Architect designating the date and time the work will be
      uncovered.

C. Materials:
   1. Comply with specifications and standards for each specific product involved.

D. Execution:
   1. Inspect existing conditions of the Project, including elements subject to damage or to
      movement during cutting and patching.
   2. After uncovering work, inspect the conditions affecting the installation of Products, or
      performance of the Work.
   3. Report unsatisfactory or questionable conditions to the Architect in writing; do not proceed
      with the work until the Architect has provided further instructions.

E. Preparation:
   1. Provide adequate temporary support as necessary to assure the structural value or integrity
      of the affected portion of the Work.
2. Provide devices and methods to protect other portions of the Project from damage.
3. Provide protection from the elements for that portion of the Project, which may be exposed by cutting and patching work, and maintain excavations free from water.

F. Performance:
1. Execute cutting and demolition by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
2. Execute excavating and backfilling by methods which will prevent settlement or damage to other work.
3. Employ the original qualified Subcontractor, Installer or Fabricator to perform cutting and patching for:
   a. Weather-exposed moisture-resistant elements.
   b. Sight-exposed finished surfaces.
4. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
5. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
6. Restore work which has been cut or removed; install new products to provide completed Work in accord with requirements of Contract Documents.
7. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
8. At penetration of fire rated wall, ceiling or floor construction, completely seal voids with fire rated material, full thickness of the construction element.
9. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
   a. For continuous surfaces, refinish to nearest intersection.
   b. For an assembly, refinish the entire unit.

1.08 PROJECT MEETINGS

A. Description:
1. The Owner will initiate the Preconstruction Conference, coordinating with the Architect and the Contractor. The General Contractor, thru his Project Coordinator, will schedule and administer progress meetings on a biweekly basis (or as required by progress of the work) and preinstallation meeting (where required by individual specification sections). Contractor is to:
   a. Prepare agenda and preside for meetings.
   b. Distribute written notice of each meeting in advance of meeting date with a copy to Architect.
   c. Make physical arrangements for meetings.
   d. Record the minutes.
   e. Reproduce and distribute copies of minutes within a reasonable time after each meeting:
      1) To all Contractors, Subcontractors and/or participants in the meeting.
      2) To all parties affected by decisions made at the meeting.
      3) Furnish one (1) copy each of minutes to Architect, Mechanical and Electrical Engineers and Owner.
      4) Submit under provisions of Section 01 7200.
2. Coordination representatives of the Contractor, Subcontractors and Suppliers are required to attend the meetings and shall be qualified and authorized to act on behalf of the entity each represents. Refer to Article 1.04.

B. Preconstruction Conference:
1. The Owner will initiate the Preconstruction Conference, coordinating with the Architect and the Contractor. This meeting will normally be held at the site of the project immediately after or concurrent with the award of the contract.
2. Record of attendance and identification of representatives:
   a. Owner Agency and Facility Representatives
   b. Architect Principal, Project Manager, Superintendent, Subcontractors, and Suppliers
3. Confirm status of contract
4. Communication:
   a. All communication between Owner and Contractor shall be through Architect.
   b. All correspondence to bear project name and Architect's Commission Number.
5. Check need for Contract Documents, including Record Documents set, and Fire Marshal's stamped set, when appropriate.
6. Construction Schedules:
   a. Notice to Proceed
   b. Contract time
   c. Critical work sequencing, initial progress schedule
   d. Major equipment deliveries and priorities
   e. Coordination
   f. Projected substantial and final completion
7. Builder's Risk Insurance
8. Contractor's use of premises
   a. Site
   b. Facility policies and procedures
   c. Security and housekeeping
9. Construction facilities and temporary utilities
10. Architect's and Owner's field observation reports
11. Progress meetings and other meetings
12. Progress payments, Applications for Payment
   a. Form, content, and procedure
   b. Stored materials
   c. Retainage and Consent of Surety
   d. Schedule of Values
   e. Attachments
13. Submittals:
   a. Initial construction schedule
   b. Updated progress schedules
   c. Shop drawing log
   d. Shop drawings, product data and samples
14. Change Orders and written orders for minor changes:
   a. Itemization of costs
   b. Extensions of time
15. Weekly payroll reports and wage rate regulations, if applicable
16. Testing and laboratory reports
17. Contract Close Out
   a. Substantial Completion
   b. Final Inspection
   c. Project Record Documents
   d. Final Payment

C. Progress Meetings:
   1. Schedule regular biweekly Project meetings.
   2. Location of meetings: The project field office of the General Contractor unless otherwise notified.
   3. Attendance:
      a. Architect and/or Owner as needed.
      b. Contractor and/or his coordination representatives.
      c. Subcontractors as appropriate to the agenda.
Selby County Government

Renovations to the Criminal Justice Center

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Coordination and Meetings

d. Suppliers as appropriate to the agenda.
e. Others as needed appropriate to the agenda.

4. Suggested Agenda:
a. Review and approval of minutes of previous meeting.
b. Review of work progress.
c. Field observations, problems, conflicts.
d. Problems which impede Construction Schedule.
e. Review of offsite fabrication, delivery schedules.
f. Corrective measures and procedures to regain projected schedule.
g. Coordination of schedules.
h. Maintenance of quality standards.
i. Other business as appropriate.

D. Preinstallation Conferences:
1. When required in individual specification Section, convene a preinstallation conference at agreed location prior to commencing work of the Section.
2. Require attendance of parties directly affecting, or affected by, work of the specific Section.
3. Notify Architect four (4) days in advance of meeting date.
4. Prepare agenda, preside at conference, record minutes, and distribute copies within two (2) days after conference to participants, with one (1) copy each to the Owner and to the Architect.
5. Review conditions of installation, preparation and installation procedures, and coordination with related work.

PART 2 - PRODUCTS
Not used

PART 3 - EXECUTION
Not used

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Contractor Quality Assurance/Control of Installation
B. References
C. Schedule of References
D. Field Samples
E. Mockup
F. Manufacturers' Field Services and Reports

1.02 CONTRACTOR QUALITY ASSURANCE/CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce Work of specified quality.
B. Comply full with manufacturers' instructions, including each step in sequence.
C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
E. Perform work by persons qualified to produce workmanship of specified quality.
F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.03 REFERENCES

A. Reference in the specifications to known standards, such as codes, specifications, etc. promulgated by professional or technical associations, institutes and societies, are intended to mean the latest edition of each such standard adopted and published as of the date of the Invitation To Bid on this project except where otherwise specifically indicated. Referenced portion of such standards shall be considered a part of these specifications as if reproduced in full.
B. Conform to reference standard by date of issue current on date of Invitation To Bid.
C. Maintain copy of standards at job site when required by Contract Documents.
D. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
E. The contractual relationship of the parties to the contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.
1.04 SCHEDULE OF REFERENCES

A. The following is a representative, but not necessarily the total list of such associations, institutes and societies, together with the abbreviation by which each is identified.

- AAMA Architectural Aluminum Manufacturer's Association
- AASHTO American Association of State Highway and Transportation Officials
- ACI American Concrete Institute
- AIA American Institute of Architects
- AIEE American Institute of Electrical Engineers
- AISC American Institute of Steel Construction
- ANSI American National Standards Institute
- APA American Plywood Association
- API American Petroleum Institute
- ASA American Standards Association
- ASHRAE American Society of Heating, Refrigerating and Air Conditioning Engineers
- ASME American Society of Mechanical Engineers
- ASTM American Society of Testing and Materials
- AWI Architectural Woodwork Institute
- AWS American Welding Society
- AWSC American Welding Society Code
- AWWA American Water Works Association
- BIA Brick Institute of America
- CSI Construction Specifications Institute
- DHI Door and Hardware Institute
- EPA Environmental Protection Agency
- FIA Factory Insurance Association
- FS Federal Specifications
- GA Gypsum Association
- IEEE Institute of Electrical and Electronic Engineers
- IES Illuminating Engineering Society
- IGSS Insulating Glass Certification Council
- NBFU National Board of Fire Underwriters
- NEC National Electrical Code
- NEMA National Electrical Manufacturers Association
- NFPA National Fire Protection Association
- NWMA National Woodwork Manufacturers Association
- NWWDNA National Wood Window and Door Association
- OSHA Occupational Safety and Hazard Act
- PCA Portland Cement Association
- SDI Steel Door Institute
- SIGMA Sealed Insulating Glass Manufacturer's Association
- SJI Steel Joists Institute
- SMACNA Sheet Metal and Air Conditioning Contractors National Association, Inc.
- SPRI Single Ply Roofing Institute
- SSPC Steel Structures Painting Council
- TCA Tile Council of American, Inc.
- UL Underwriters’ Laboratories, Inc.
- USASI United States of America Standards Institute
- WWPA Western Wood Products Association

1.05 FIELD SAMPLES

A. Install field samples at the site as required by individual specification sections for review.

B. Acceptable samples represent a quality level for the Work.
C. Where field sample is specified in individual sections to be removed, clear area after field sample has been accepted by Architect.

1.06 MOCK-UP

A. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.

B. Where mock-up is specified in individual sections to be removed, clear area after mock-up has been accepted by Architect.

1.07 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. Submit qualifications of observer to Architect fifteen (15) days in advance of required observations. Observer subject to approval of Architect.

B. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as applicable, and to initiate instructions when necessary.

C. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Submit report in duplicate within ten (10) days of observation to Architect and Owner for review.

PART 2 - PRODUCTS
Not used

PART 3 - EXECUTION
Not used

END OF SECTION
PART 1 - GENERAL

1.01 WORK INCLUDES

A. Selection and Payment
B. Contractor Submittals
C. Laboratory Responsibilities
D. Laboratory Reports
E. Limits on Testing Laboratory Authority
F. Contractor Responsibilities
G. Schedule of Inspections and Tests

1.02 REFERENCES

A. ASTM D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
B. ASTM E329 - Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction.

1.03 SELECTION AND PAYMENT

A. Contractor shall employ and pay for the services of an approved Independent Testing Laboratory to perform specified services and testing.
B. Employment of the laboratory shall in no way relieve the General Contractor or any Subcontractor from their obligations to perform the Work of the Contract.

1.04 QUALITY ASSURANCE

A. Meet "Recommended Requirements for Independent Laboratory Qualification", published by American Council of Independent Laboratories.
B. Meet basic requirements of ASTM E329, "Standards of Recommended Practice For Inspection and Testing Agencies For Concrete, Steel and Bituminous Material As Used In Construction".
C. Authorized to operate in the State of Tennessee.
D. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
E. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards (NBS) Standards or accepted values of natural physical constants.

1.05 LABORATORY RESPONSIBILITIES

A. Test samples of mixes submitted by Contractor.
B. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
C. Perform specified inspection, sampling, and testing of products in accordance with specified standards.

D. Ascertain compliance of materials and mixes with requirements of Contract Documents.

E. Promptly notify Architect and Contractor of observed irregularities or non-conformance of Work or Products.

F. Perform additional inspections and tests required by Architect.

G. Attend pre-construction, pre-installation conferences and progress meetings as applicable to work herein.

1.06  LABORATORY REPORTS

A. Promptly submit written report of each test and inspection; one (1) copy each to Architect, Structural Engineer (where applicable), Owner and Contractor, and one (1) copy for Project Record Documents File.

B. Include
1. Date issued.
2. Project name.
3. Testing laboratory name, address and telephone number.
4. Name and signature of Engineer registered in State and laboratory inspector or technician.
5. Date and time of sampling or inspection.
6. Record of temperature and weather conditions.
7. Date of test.
8. Location of sample or test in the Project.
9. Type of inspection, test or re-test.
10. Results of tests and compliance with Contract Documents.
11. Monetary accounting of tests by test type indicating test or re-test charges due and/or not due under this Contract.

C. Perform additional tests as required by the Architect and Owner. The Contractor shall at his expense, provide proper access, furnish necessary samples, and if required, deliver them to the testing agency when and where directed. Additional cost for the above will be paid as follows:
1. Tests for Owner's knowledge not relating to quality - paid by Owner.
2. Tests for quality of work:
   a. If tests confirms work to be as specified - paid by Owner.
   b. If test confirms work not as specified - paid by Contractor and/or Subcontractor at fault per Article 13.5 of the General Conditions.

1.07  LIMITS ON AUTHORITY OF TESTING LABORATORY

A. Laboratory may not release, revoke, alter or enlarge on requirements of Contract Documents.

B. Laboratory may not approve or accept any portion of the Work.

C. Laboratory may not perform any duties of the Contractor and/or his Subcontractors.

D. Laboratory has no authority to stop the Work.

1.08  CONTRACTOR AND/OR SUBCONTRACTORS' RESPONSIBILITIES

A. Cooperate with laboratory personnel, provide access to work.
B. Secure and deliver to the laboratory, when requested, adequate quantities of representational samples of materials proposed to be used and which require testing.

C. Provide to the laboratory thru the Architect the preliminary design mix proposed to be used for concrete, and other material mixes which require control by the testing laboratory.

D. Furnish copies of Product's test reports as required.

E. Furnish incidental labor and facilities:
   1. To provide access to Work to be tested.
   2. To obtain and handle samples at the Project Site or at the source of the product to be tested.
   3. To facilitate inspections and tests.
   4. For storage and curing of test samples.
   5. To repair test area, if sample is removed from materials requiring water-proof integrity.

F. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.
   1. When tests or inspections cannot be performed after such notice, reimburse Owner for laboratory personnel and travel expenses incurred due to Contractor's and/or Subcontractor's negligence.

G. Make arrangements with laboratory and pay of additional samples and tests required for Contractor's and/or his Subcontractor's convenience.

1.09 SCHEDULE OF INSPECTIONS AND TESTS (Reference individual sections for the required testing.)

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES

B. Temporary Telecommunications Services
C. Temporary Fire Protection
D. Construction Aids
E. Noise and/or Vibrations During Construction
F. Exterior Enclosures
G. Interior Enclosures
H. Barriers and Barricades
I. Protection of Work
J. Field Offices and Sheds
K. Security
L. Vehicular Access and Parking
M. Progress Cleaning and Dust Control

1.02 TEMPORARY ELECTRICITY AND LIGHTING

A. Temporary electric power required for the performance of work under this Contract may be obtained from the Owner’s present power source at the location and in quantities designated on the drawings and/or within Division 26 of these specifications.

B. The electrical subcontractor is to furnish and install at his expense and arrangement, all means of bringing electrical power, wiring, etc. from this Owner’s point of source to the point of use or need including receptacle devices, wiring, etc. and their complete removal at completion as may be needed to provide adequate artificial lighting and power for all areas of the Work. Owner’s electrical power source shall not be interrupted without specific approval and arrangement with the Owner.

C. If requirements for current/voltage exceed the Owner’s capacity or type as described above, the needing Contractor and/or Subcontractor shall arrange for, pay and provide his own source at his total expense including removal of same at completion of the Work.

D. The electrical subcontractor must pay for and provide adequate protection and/or protection devices to protect the Owner’s electrical source and supply including branch circuits, panelboards, etc. as may be deemed necessary for a complete system in accord with all local and national codes.

E. The Owner will pay directly to the Power Company the cost of all electric power consumed.
1.03 TEMPORARY HEAT AND VENTILATION

A. The General Contractor is to provide temporary heat and ventilation as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified conditions for the installation of materials and to protect materials and finishes from damage due to temperature and/or humidity.

B. Provide adequate forced ventilation of enclosed areas for curing of installed materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors or gases.

C. Portable heaters shall be standard non-smoke producing approved units such as gas (natural of LP) or approved oil burners complete with controls. NO Salamanders or open fires will be permitted.

D. Pay all cost of installation, maintenance, operation, removal and for fuel consumed.

E. When permanent building Heating, Ventilating and Air Conditioning Systems, under this Contract are installed and operable, in the opinion of the Owner and Architect, after consultation with the HVAC Subcontractor and General Contractor, he will have them placed into operation for temporary heating, ventilating and air conditioning. Placing the permanent HVAC systems into temporary use will not affect the guarantees required under this specification and will not set the beginning date of guarantees.
   1. Provisions of filters, extra filters, additional cleaning and maintenance by the HVAC Subcontractor will be as specified under Division 23 of these Specifications.
   2. Owner will pay cost of all fuel consumed.
   3. The maximum time that permanent systems can be used under a temporary basis is sixty (60) days.

1.04 TEMPORARY TELEPHONE SERVICE

A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.

B. Telecommunications services shall include:
   1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
   2. Telephone Lines: One line, minimum; cellular or mobile line is acceptable.
   3. Internet Connections: Minimum of one.
   4. Email: Account/address reserved for project use.
   5. Facsimile Service: Minimum of one dedicated fax machine/printer.

1.05 TEMPORARY WATER

A. Water required for the performance of work under this Contract may be obtained from the Owner’s present supply at the location and in quantity designated on the drawings and/or within Division 22 of these specifications.

B. The plumbing subcontractor is to furnish and install all valves, piping, hose, fittings, vacuum breakers, back flow preventers and/or devices required to connect and transmit water from the Owner’s point of source to the point of his need in adequate quantity for progress of the work at his expense. All such shall be removed at the end of the work. Owner’s piping and water supply shall not be interrupted without specific approval and arrangement with the Owner.

C. If requirements for water exceed the Owner’s provided service as described above, the needing Contractor and/or subcontractor shall provide his own source at his total expense including removal of same at completion of the Work.
D. The Owner will pay directly to the utility company the cost of all temporary water consumed.

1.06 TEMPORARY SANITARY FACILITIES

A. The General Contractor is to provide adequate enclosed sanitary toilet facilities for each gender in compliance with local laws, and regulations including service, cleaning, maintenance, with privacy locking.

B. The Owner’s Existing Toilet Facilities may not be used by construction personnel.

1.07 TEMPORARY FIRE PROTECTION

A. The General Contractor is to provide proper and adequate portable fire extinguishing equipment at his operation when work is in progress, including requirements for Field Offices and Storage Sheds.

1.08 CONSTRUCTION AIDS

A. Provide construction aids and equipment required by personnel and to facilitate the execution of the Work: Scaffolds, staging, ladders, ramps, runways, platforms, lifts, railings, hoists, cranes, chutes, appliances, equipment and other facilities. Maintain all facilities and equipment in a first-class condition for the safety and use of this construction.

B. Prolonged parking or blocking of traffic at the site will not be permitted. Provide protection necessary to maintain traffic arteries in a first class condition.

C. The Owner’s present loading dock facilities, compaction equipment, and trash containers may not be used for construction purposes.

1.09 NOISE AND/OR VIBRATIONS DURING CONSTRUCTION

A. Noise and/or vibrations generated by construction of this work may at times create a problem for the Owner. The Owner recognizes and can tolerate the normal level of noise created by a majority of construction activity and, therefore, does not feel any need to set certain hours of the day when noise will be restricted. The General Contractor and all Subcontractors as applicable to their work will, however, make every effort to keep noise to a minimum.

B. However, the Owner also recognizes that during certain construction work the noise and vibration level is unusually higher than normal. These higher levels of noise and vibration may conflict with a specific activity being simultaneously conducted by the Owner. It is required of the General Contractor that agreement be secured from the Owner prior to scheduling any such activity and that the Contractor and all subcontractors cooperate if an ongoing activity becomes objectionable by its longevity or overlapping into a program started later by the Owner. It is understood and agreed that both parties will cooperate to this end so that neither will be unduly inconvenienced by this requirement.

1.10 EXTERIOR ENCLOSURES

A. Provide temporary insulated weather-tight enclosure of exterior openings to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.11 INTERIOR ENCLOSURES
A. Provide temporary enclosures to separate work areas from the areas of existing building occupied by Owner, to prevent penetration of dust or moisture into occupied areas, to prevent damage to existing equipment, to protect Owner’s employees and operations from construction work and to protect the public from construction work.

B. Temporary partition and ceiling enclosures: Framing and sheet materials must comply with structural and fire rating requirements of applicable codes and standards. Close joints between sheet materials and seal edges and intersections with existing surfaces to prevent penetration of dust or moisture.

1.12 BARRIERS AND BARRICADES

A. Provide, install and maintain suitable barricades, partitions and/or barriers as required to prevent and protect public entry, personnel entry, safety and to protect the Work and existing facilities.

B. Provide protection of existing trees, plants and landscaping to remain within construction limit lines or areas as shown on drawings.

C. Remove barriers and barricades when no longer needed or at completion of work.

1.13 PROTECTION OF INSTALLED WORK

A. Protect installed Work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to minimize damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Prohibit traffic from landscaped areas.

1.14 SECURITY

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

B. Coordinate with Owner's security program.

1.15 VEHICULAR ACCESS AND PARKING

A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.

B. Coordinate access and haul routes with governing authorities and Owner.

C. Provide and maintain access to fire hydrants, free of obstructions.

D. Provide means of removing mud from vehicle wheels before entering streets.
Designated existing on-site roads may be used for construction traffic.

Contractor is responsible to provide parking for Contractor’s workers and/or their personal vehicles. The existing loading dock may only be used for construction deliveries during normal operating hours, however, these deliveries must be coordinated with the Building Facility Staff. Vehicles may not be left unattended in this location for an extended period of time without prior approval.

1.16 PROGRESS CLEANING AND DUST CONTROL

Execute periodic cleaning to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish and wind blown debris, resulting from construction operations.

Provide on-site containers for the collection of waste materials, debris and rubbish.

Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

Remove debris and rubbish from pipes, chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.

Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

PART 3 - EXECUTION

3.01 PREPARATION

Consult with Owner, review site conditions and factors which affect this section of specifications.

Relocate construction aids, barriers and barricades as required by progress of construction, by storage or work requirements, and to accommodate legitimate requirements of the Owner and other contractors and subcontractors employed at the site.

3.02 GENERAL

Comply with applicable requirements specified in sections of Division 2 thru 33.

Maintain and relocate barricades and barriers during construction period as appropriate.

Install facilities of a neat and reasonable uniform appearance, structurally adequate for the required purposes.
3.03 REMOVAL OF UTILITIES, FACILITIES AND CONTROLS

A. Remove temporary above grade or buried utilities, equipment, facilities and materials prior to Substantial Completion or no longer needed.

B. Remove underground installations to a minimum depth of two feet.

C. Clean and repair damage caused by installation or use of temporary work.

D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES:

A. The Contractor is to furnish, install and maintain one (1) Project Identification sign as specified and detailed herein. Place the signs in the location directed by the Architect and maintain in good condition until completion of the project.

B. The Contractor will be required to provide temporary on-site informational, safety, and traffic signs:
   1. As required by codes, laws and regulatory agencies
   2. To identify key elements of the construction facilities
   3. To direct traffic
   4. Warning and/or other safety signs required to protect the public in an occupied building

C. Remove signs on completion of construction. Backfill post holes with topsoil and replace sod in all areas disturbed by the removal of the project signs. Legally dispose of the project signs off site.

D. No other Contractor and/or Subcontractor identification signs to be displayed. Contractor will take all steps to prevent installation of unauthorized signs and will cause their removal (without cost to the Owner).

1.02 QUALITY ASSURANCE

A. Sign Painter: Professional experience in the type of work required

B. Finishes, Painting: Adequate to resist weathering and fading for the scheduled construction period

PART 2 - PRODUCTS

2.01 SIGN MATERIALS

A. Structure and Framing: May be new or used, wood or metal, in sound condition structurally adequate for the work and suitable for specified finish

B. Sign surfaces; Exterior plywood with medium density overlay, standard large sizes to minimize joints
   1. Thickness: As required by standards to span across framing members, to provide even, smooth surface without waves or buckles, 3/4” minimum.

C. Edge Frame, Joint Backup, and Spacers: 2” x 4” flat, painted and back primed.

D. Posts: 4” x 4”, treated and painted, placed 15” from vertical edges of face and set 4” into ground; top end aligns with top of sign.

E. Horizontal Joint at mid-point of sign shall be backed up and sealed to make as inconspicuous as possible.
F. Diagonal Braces: Double 2" x 6" (one on each side of post), treated and painted, anchors to post at mid-height of face, anchor to brace stake.

G. Brace Stakes: 4" x 4", treated and painted, set 2 feet into ground 6 feet behind posts.

H. Paint for supporting members: White enamel to completely cover.

I. Finished installation shall be rigid, level, plumb and secure and removed upon direction from Owner.

J. Sign layout and text shall be executed by an experienced professional sign painter.

K. Paint: Exterior quality, as specified in Section 09 9000

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install project identification sign within thirty 30 days after date fixed by Notice To Proceed.

B. Erect on the site at a location of public visibility, adjacent to the main entrance as approved by Architect.

3.02 PROJECT IDENTIFICATION SIGN

A. One painted sign, of not less than 64 sq. ft each in area, with painted graphic content to include:
   1. Title of Project
   2. Name of Owner
   3. Names and titles of Owner’s Authorities and/or Committees
   4. Names and titles of:
      a. Architect/Engineer
      b. Professional Consultants
   5. Name of Contractor

B. Graphic Design, style of letting and colors designated by Architect.

C. Architect will provide clarification drawing after Owner-Contractor agreement is signed for sign layout.

3.03 INFORMATIONAL SIGNS

A. Paint all exposed surfaces: one coat of primer and one coat of exterior paint.

B. Paint graphics in the styles, sizes and colors as selected.

C. Install at a height for optimum visibility, on ground mounted poles or attached to temporary structural surfaces.

3.04 MAINTENANCE

A. Maintain signs and supports in a neat, clean condition: repair damages to structure, framing or sign.
B. Relocate informational signs as required by progress of the work.

3.05 REMOVAL

A. Remove signs, framing, supports and foundations at completion of project and restore the area.

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES:

A. Products
B. Existing Material
C. Transportation and Handling
D. Storage and Protection
E. Product Options
F. Acceptance of Specified Material
G. Substitutions
H. Examination of Surfaces
I. Manufacturers' Instructions
J. Hazardous Material Certification

1.02 RELATED REQUIREMENTS IN OTHER PARTS OF THE PROJECT MANUAL

A. General and Supplemental Conditions of the Contract

1.03 PRODUCTS

A. Material and equipment incorporated into the Work:
   1. Conform to applicable specifications and standards.
   2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Architect.
   3. Manufactured and fabricated products:
      a. Design, fabricate and assemble in accord with the best engineering and shop practices.
      b. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
      c. Two or more items of the same kind shall be identical, by the same manufacturer.
      d. Products shall be suitable for service conditions.
      e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
   4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.04 EXISTING MATERIAL

A. Do not use material and equipment removed from existing premises except as specifically permitted by the Contract Documents.

B. Use special care in removal, handling, storage, and reinstallation to assure proper function in the completed work.
C. Arrange for transportation, storage and handling of products which require off-site storage, restorage, or renovation. Pay all costs for such work.

1.05 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accord with the Construction Schedules, coordinate to avoid conflict with work and conditions at the site.

B. Deliver products in undamaged condition, in manufacturer’s original containers or packaging, with identifying labels intact and legible.

C. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.

D. All materials and equipment for which U.L. labels are required or available, provide appropriate labels on containers or packaging.

E. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.06 STORAGE AND PROTECTION

A. Store and protect products in accord with manufacturer’s instructions, with seals and labels intact and legible.
   1. Store products subject to damage by the elements in weather-tight enclosures.
   2. Maintain temperature and humidity within the ranges required by manufacturer’s instructions.

B. Exterior Storage
   1. Store fabricated products above the ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation and wind blow off.
   2. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

C. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions and free from damage or deterioration.

D. Protection After Installation. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.

1.07 PRODUCT OPTIONS

A. Products specified by reference standards or by description only: Any product meeting those standards or description.

B. Products specified by naming one or more manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products specified by naming one or more manufacturers with a provision for substitutions: Submit a request for substitution for any manufacturer not named. Reference Article 1.09.

D. Certain products are marked “No Substitution” and do not qualify under the above Para. 1.07C.
1.08 ACCEPTANCE OF SPECIFIED MATERIALS

A. Contractor and/or any Subcontractor, by entering into a contract to furnish material and/or furnish labor and material for any part of this work, agrees that the material and methods specified herein are suitable to achieve the end results required and to permit the guarantees required, unless stated otherwise in writing to the Architect prior to execution of his Contract.

B. Though the Architect generally specifies a result rather than a method, it is considered essential to the usefulness of this specification that methods be generally outlined. No departure from results or methods specified herein will be permitted unless such permission is granted by the Architect in writing. Such permission must be obtained prior to executing each appropriate contract. If the above is not complied with, no future claims for failure because of materials, methods, etc. specified will be valid or entertained.

1.09 SUBSTITUTIONS

A. Contractors desiring to use another brand, material or manufacturer of same quality, appearance and utility to that specified may request substitution as provided below:

1. Substitutions prior to Bidding must be made in writing and must be received by the Architect a minimum of ten (10) days prior to bid. The burden of delivery to the Architect remains totally the responsibility of the Bidder. Architect will approve or disapprove the request for substitution, in writing, and his decision shall be final and will be recorded by appropriate Addenda issued to all bidders within three (3) days prior to bid.

2. Substitutions After Bidding will not be allowed.

3. Unless substitutions are requested within the time periods stated above and provided above, no deviation from the specifications will be allowed. Requests for substitutions will only be considered if the Contractor submits the following:
   a. Complete technical and cost data including drawings, literature, complete specifications, test data, and samples (if requested) and such additional information as may be required by the Architect on the proposed for substitution.
   b. Similar data to above for items, if any, to be deleted by proposed substitution.
   c. Statement by Contractor that the proposed substitution is in full compliance with the Contract Documents and written statements that he:
      1) represents that he has personally investigated the proposed substitute product and determined that is equal to or superior in all respects to that specified;
      2) represents that he will provide the same warranty for the substitute that he would for that specified;
      3) certifies that the cost data presented is complete and includes all related costs and waives all claims for additional costs related to the substitution which subsequently become apparent;
      4) will coordinate the installation of the accepted substitute, making such changes as may be required for the work to be complete in all respects and
      5) will disclose the existence and extent of financial interests, whether direct or indirect, he has in subcontractors and material suppliers which he may propose for the project. Include disclosure with submittal.

1.10 EXAMINATION OF SURFACES

A. Throughout this work, it will be required that certain contractors and/or subcontractors apply their material to or over work done by others, and which would affect his work. The general coordination of all such is the responsibility of the Contractor. However, it is the responsibility of each Contractor, Subcontractor or Supplier, to which it applies, to abide by the following whether or not it is specifically required, by repeating, in his particular section of these specifications.

B. Before commencing application of his Work, he shall thoroughly examine all surfaces to receive his Work and immediately notify the Architect in writing, of any imperfections in surfaces which
would, in any way, affect satisfactory completion of Work. Absence of such notification shall be construed as acceptance of surfaces to receive Work. Later claims of defects in such Work will not, in any way affect guarantee of this contractor.

1.11 MANUFACTURER'S INSTRUCTIONS

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation.
   1. Maintain one set of complete instructions at the job site during installation and until completion.

B. Handle, install, connect, clean, condition, prepare and adjust products in strict accord with such instructions and in conformity with specified requirements. Do not proceed with work without clear instructions.

1.12 HAZARDOUS MATERIAL CERTIFICATION

A. All materials and/or systems used for completion of this project are to be free of asbestos and/or other hazardous materials per requirements of OSHA, EPA and all other regulatory agencies. All certification letters are to be attached to each product and included in Section 01 7000 Close Out Documents as permanent record of same.

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES

A. General Requirements
B. Substantial Completion
C. Final Review
D. Re-inspection Fees
E. Final Application for Payment
F. Contractor Close Out Submittals to Architect
G. Volume Format
H. Format - Close Out Submittal - Volume 1
I. Final Cleaning
J. Spare Parts and Maintenance Material

1.02 GENERAL REQUIREMENTS

A. Comply with requirements stated in General and Supplemental Conditions of the Contract and in Specifications for administrative procedures in closing out the Work unless modified herein.

1.03 SUBSTANTIAL COMPLETION

A. When Contractor considers the Work is substantially complete, he shall submit to Architect:
   1. A written notice that the Work is sufficiently complete that the Owner may occupy the Work for the use for which it is intended and is therefore substantially complete.
   2. A list of items to be completed or corrected and dates scheduled for completion or correction of each item.

B. Within a reasonable time after receipt of such notice, the Architect will schedule a review with the Owner to determine the status of completion. Status of completion will be judged by the entire project completion without limitation to any one phase or part of the total construction.

C. Should Architect and the Owner determine that the Work is not substantially complete, the Architect will promptly notify the Contractor in writing, stating the reasons.

D. Contractor shall remedy the deficiencies in the Work and send a second written notice of substantial completion to the Architect.

E. Architect will review the Work again under the above Para. 1.03B.

F. When Architect and Owner concur that the Work is substantially complete, Architect will:
1. Prepare a Certificate of Substantial Completion on AIA Form G704 accompanied by Contractor's list of items to be completed or corrected, as verified and amended by the Architect.
2. Submit the Certificate to Owner and Contractor for their written acceptance of the responsibilities assigned to them in the Certificate of Substantial Completion.

1.04 FINAL REVIEW

A. When Contractor determines the Work is complete, he shall submit to the Architect written certification that:
1. Contract Documents have been reviewed.
2. Work has been inspected by a qualified person authorized by the Contractor for compliance with Contract Documents.
3. Work has been completed in accordance with Contract Documents.
4. Equipment and systems have been tested and demonstrated in the presence of the Owner's representative and are operational.
5. Testing and Balancing of the air distribution system has been completed and 4 copies of the balancing and testing records have been submitted to the Architect for evaluation and approval. (Reference Section 01 7200, Article 1.04.)
6. Inspections or letters of acceptance for items requiring approval from a governing authority.
7. Materials and/or systems used for completion of this project are free of asbestos and/or other hazardous materials per requirements of OSHA, EPA and all other regulatory agencies. All certification letters are to be attached thereto for the permanent record. (Reference Section 01 6000, Article 1.12.)
8. Work is complete and ready for final inspection.

B. Within a reasonable time after receipt of the Certification above, the Architect and Owner will schedule a review to determine the status of completion. Status of Completion will be judged by the entire project completion without limitation to any one phase or part of the total construction.

C. Should Architect and/or Owner consider that the Work is incomplete or defective:
1. Architect will promptly notify the Contractor in writing, listing the incomplete or defective work.
2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Architect that the Work is complete.
3. Architect will review the Work again as Para. 1.04B above.

D. When the Architect and Owner find the Work acceptable under the Contract Documents, the Contractor will be asked to submit Close Out Submittals. Refer to Article 1.07.

1.05 RE-INSPECTION FEES

A. Should Architect perform additional reviews due to failure of the Work to comply with the claims of status of completion made by the Contractor:
1. Owner will compensate Architect for such additional services.
2. Owner will deduct the amount of such compensation from the final payment to the Contractor.

1.06 FINAL APPLICATION FOR PAYMENT

A. Submit the Final Application For Payment accompanied by a final statement of accounting to the Architect.
B. Statement shall reflect all adjustments to the Contract Sum.
   1. The original Contract Sum
   2. Additions and deductions resulting from:
      a. Previous Change Orders
      b. Deductions for non-conforming work
      c. Other adjustments as appropriate.
   3. Total Contract Sum as adjusted
   4. Previous payments
   5. Sum remaining due

C. When the Architect and owner determine that the Close Out Submittals are complete and correct and has received the Final Application For Payment with the Statement of Account, the Architect will prepare a Final Change Order reflecting the approved adjustments to the Contract Sum which were not previously made by Change Order subject to Owner's approval.

1.07 CONTRACTOR'S CLOSE OUT SUBMITTALS TO ARCHITECT

A. The close out submittal shall be complete and submitted to the Architect as a single package in three (3) separate volumes:
   1. Volume 1: Legal Close Out Data - Project Close Out Data as required by Section 01 7000, Article 1.09.
   2. Volume 2: Project Record Documents - Per requirements of Section 01 7200.
   3. Volume 3: Project Warranties, Operation and Maintenance Data - Operating and Maintenance Data, Warranties and Bonds, Instructions to Owner's Personnel - Per requirements of Section 01 7250.

B. Refer to Article 1.08 for Volume Format.

1.08 VOLUME FORMAT

A. Each volume shall consist of commercial quality three ring binder with durable plastic covers. Use ring size appropriate to the amount of material to be included.

B. On face and edge of binder covers, print title of project and subject matter of binder when multiple binders are required.

C. Internally subdivide the binder contents with permanent page dividers with tab titles clearly printed under reinforced plastic tabs.

D. Contents: Prepare a Table of Contents for each volume with each item, product or system identified on white paper.

E. Refer to Article 1.07 for Contractor Close Out submittal of each volume.

1.09 CLOSE OUT SUBMITTAL - VOLUME 1

A. Furnish two complete sets of Legal Close Out Data.

B. Volume 1 Format shall be prepared as per Article 1.08. If two or more binders are required, identify as Volume 1A, 1B, etc.

C. Contents of this volume to include the following:
   1. Table of Contents indicating complete contents related to tab dividers.
2. Cover sheet or sheets giving complete Project Name, Contractors and Subcontractors’ Name, Address, and Telephone Number, Name of Project Superintendent, Project Manager and related general information.

3. Consent of Surety to Final Payment, AIA Form G707.

4. Releases of Liens from the Contractor, all Subcontractors and major material suppliers, AIA Form G706A.

5. Contractor Affidavit of Payment of Debts and Claims, AIA Form G706.

6. Final Application For Payment, AIA Form G702 with Continuation Sheet AIA Form G703

7. Final Statement of Accounting

8. Signed Change Orders (if any)

9. Certifications - Refer to Article 1.04.

10. Other documents related to fiscal provisions

11. Contractor letters of Substantial Completion

12. Architect Prepared Certificate of Substantial Completion (AIA Form G704) with Final Architectural Punch List with each item initialed by Contractor.

13. Occupancy Permit


D. Architect will transmit one (1) copy of Volume to Owner and retain one for his records.

1.10 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. Clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Clean equipment and fixtures to a sanitary condition.

D. Clean or replace filters as required of operating equipment.

E. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.11 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.

B. Deliver to project site and place in location as directed prior to final payment.

PART 2 - PRODUCTS
Not used

PART 3 - EXECUTION
Not used

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Record Documents
B. Reproducible "Record As-Built Drawings"
C. Close Out Submittal

1.02 RECORD DOCUMENTS

A. General:
   1. General Contractor is to maintain at the site in good condition, one complete record set of all Contract Documents for use as "Record Documents."
      a. Contract Drawings
      b. Project Manual and Specifications
      c. Addenda
      d. Supplemental Drawings
      e. Change Orders and other Modifications to the Contract
      f. Minutes of all project meetings
      g. Architect Field Orders or written instructions
      h. Construction Schedules including all revisions
      i. Approved Submittals:
         1) Shop Drawings
         2) Product Data
         3) Samples
         4) Design Data
         5) Test Reports
         6) Manufacturer's Instructions
         7) Manufacturer's Certificates
         8) Applicator or Installer's Certification
         9) Certifications
      j. Applicator certification of substrate
      k. Manufacturer's Field Reports
      l. Field Test Reports (as applicable)

B. Maintenance of Documents:
   1. Store Record Documents in General Contractor's field offices apart from documents used for construction. Provide secure storage space for files and racks for storage of Record Documents.
   2. Maintain Record Documents in a clean, dry, legible condition and in good order. Do not use Record Documents for reference or construction use.
   3. Make Record Documents available for inspection by the Architect or Owner, upon request.

C. Marking Devices:
   1. Provide felt tip marking pens for recording information in the color code identified and cross-referenced to the trade required by Contract Specifications.

D. Recording:
   1. Label each document "PROJECT RECORD" in neat large printed letters.
2. **Record Information** on a weekly basis, concurrently with construction progress. Do not "conceal" any work until required information is recorded.
   a. "Concealed" under this section is defined as not exposed after completion of construction. Concealed locations include the following: In walls (hollow or solid of all types), above ceilings (all ceilings), in floors, beneath earth, floors, etc. Record exact location, routing, and identification.

3. Drawings: Legibly mark to record actual construction:
   a. Depths of various elements of foundation in relation to finish first floor datum.
   b. Horizontal and vertical locations of underground utilities, (Plumbing, Sprinkler, Mechanical and Electric) and appurtenances, referenced by dimension to permanent surface improvements.
   c. Location of internal utilities (Plumbing, Sprinkler, Mechanical and Electric) and appurtenances concealed in or above the construction, referenced to visible and accessible features of the structure including valves, tap points, junction boxes, electric wiring, test points and other related features as appropriate.
   d. Field changes of dimension and detail.
   e. Changes made by Field Order or by Change Order.

4. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
   a. Manufacturer's name and product model and number.
   b. Product substitutions or alternates utilized.
   c. Changes made by Addenda and Modifications.

5. Submit Record Documents as part of Close Out Submittal - Volume 2.

1.03 **REPRODUCIBLE "RECORD AS-BUILT DRAWINGS"**:

   A. "Record As-Built Drawings" will be required by the following Subcontractors:
      1. Mechanical
      2. Plumbing
      3. Fire Protection/Sprinkler
      4. Electrical
      5. Civil
      6. General Contractor (Structural and Architectural Modifications)

   B. Prepare reproducible permanent Mylar "Record As-Built Drawings" to show construction as actually accomplished as recorded on "Project Record Documents" in Para. 1.02D above. The drawings shall be prepared by the appropriate Subcontractor by using the Record Drawings. The drawings are to be on Mylar.

   C. "As-Built Drawings" will be required of the above listed Subcontractors and shall show as record:
      1. All deviations from the sizes, locations and all other features of all installations shown by the Contract Documents.
      2. Where the Contract Documents show installations in diagrammatic or schematic form the actual location will be recorded.
      3. It shall be possible, using these drawings, to correctly and easily locate, identify and establish sizes of all piping, conduit, etc. and such other features of work which will be concealed per Article 1.02 above by the following means:
         a. Locations of underground Work shall be established by dimensions to column lines or walls, and by properly referenced centerline or invert elevations and rates of fall.
         b. For work concealed in the building sufficient information shall be given so it can be located with reasonable accuracy and ease. This shall be by dimension wherever possible. Where this is not reasonably practical, illustrate the Work on the drawings in relation to the spaces in the building near which it was actually installed.
         c. Such other notes as required to designate size, service, etc.
4. Additional drawings shall be provided by the Subcontractor, as necessary for clarification.
5. All such drawings shall be done carefully and neatly by a competent draftsman and in a form approved by the Architect.

1.04 CLOSE OUT SUBMITTAL - VOLUME 2

A. Furnish one (1) complete set of Project Record Documents with additional required sets of Record “As-Built” Drawings.

B. Volume 2 of Close Out Submittal shall be submitted along with Volume 1 and 3 as defined in Section 01 7000, Article 1.07.

C. Volume 2 Format shall be prepared as per Section 01 7000, Article 1.08. If two or more binders are required, identify as Volume 2A, 2B, etc.

D. Contents of this volume to be in the following format:
   1. Table of Contents indicating complete contents related to tab dividers and items separated from binders.
   2. Cover sheet or sheets giving complete Project Name, Contractor and Subcontractor’s Name, Address, Telephone Numbers, Name of Project, Superintendent, Project Manager and related general information.
   3. Project Record Documents not required to be in binders. List in Table of Contents.
   4. One (1) set of marked-up blueline “Record Drawings” from the project site.
   5. One (1) set of Project Record Mylar reproducible “As-Built” drawings.
   6. Four (4) sets of Project Record bond copies of “As-Built” drawings.
   7. Four (4) sets of Project Manual marked to show in each Specification Section the actual manufacturer, trade names, catalog number, and supplier of each product.
   8. Supplemental Drawings not required to be in binder. List in Table of Contents.
   9. Shop Drawing Submittals:
      a. Submit one copy of each document bearing Architect's "Review for General Compliance" stamp denoted "No Exception Taken" or "Make Correction Noted."
      b. Include documents in binders where possible. List in Table of Contents those items not included in binder.
   10. Minutes of all project meetings..
   11. Paint color schedules.
   12. Testing Laboratory "Product Test Reports".
   15. 100 blank keys with name, address and phone number of local supplier.

PART 2 - PRODUCTS
Not used

PART 3 - EXECUTION
Not used

END OF SECTION
PART 1 - GENERAL

1.01 SECTION INCLUDES

A. General Requirements
B. Warranties and Bonds
C. Materials and Finishes
D. Equipment and Systems
E. Close Out Submittals
F. Instruction of Owner Personnel

1.02 GENERAL REQUIREMENTS

A. The General Contractor, his Subcontractors and Material Suppliers, as applicable to their portion of the work, shall compile and maintain accurate Project Record Documents, Submittals (Shop Drawings, Product Data, Manufacturer's Service), Maintenance and Operation Data, Internal Wiring Diagrams and related information that the Owner may need for his use in maintenance, operation, repair, renovation or future additions to the Project and/or its equipment. Manufacturers, Suppliers, Subcontractors, Representatives, bidding the work under this Contract are advised that proprietary information on their equipment is and will be required for submittal herein. Final payment will not be made until all data is submitted in quantity and form required herein.

B. Furnish all warranties, applicator/manufacturer certifications, letters of acceptance, maintenance agreements, bonds, operation data, maintenance service data, parts list, wiring diagrams and other documents as required by this Section of Specifications.

1.03 WARRANTIES AND BONDS

A. Assemble warranties and bonds, service and maintenance contracts, executed by each of the respective manufacturers, suppliers and subcontractors, neatly typed, in orderly sequence. Provide complete information for each item.
   1. Product or work item
   2. Firm, with name of principal, address and telephone number
   3. Scope
   4. Date of beginning of warranty, bond, or service and maintenance contract
   5. Duration of warranty, bond, or service and maintenance contract
   6. Provide information for Owner's personnel:
      a. Proper procedure in case of failure
      b. Instances which might affect the validity of warranty or bond
   7. Contractor, name of responsible principal, address and telephone number

1.04 MATERIALS AND FINISHES

A. Content, for architectural products, applied materials and finishes:
   1. Manufacturer's data, giving full information on products
      a. Catalog number, size, composition
b. Color and texture designations
   c. Information required for reordering special manufactured products

2. Instructions for care and maintenance
   a. Manufacturer's recommendation for types of cleaning agents and methods
   b. Cautions against cleaning agents and methods which are detrimental to the product
   c. Recommended schedule for cleaning and maintenance

B. Content, for moisture protection and weather-exposed products:
   1. Manufacturer's data, giving full information on products
      a. Applicable standards
      b. Chemical composition
      c. Details of installation
   2. Instructions for inspection, maintenance and repair

C. Additional requirements for maintenance data: The respective sections of Specifications

1.05 EQUIPMENT AND SYSTEMS

A. Each Item of Equipment and Each System: Include description of unit or system and
   component parts including all proprietary information. Identify function, normal operating
   characteristics, and limiting conditions. Include performance curves, with engineering data,
   wiring diagrams, and tests, and complete nomenclature and commercial number of replaceable
   parts.

B. Panelboard Circuit Directories: Provide electrical service characteristics, controls and
   communications.

C. Include color coded wiring diagrams as installed.

D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and
   sequences. Include regulation, control, stopping, shut-down and emergency instructions.
   Include summer, winter and any special operating instructions.

E. Maintenance Requirements: Include routine procedures and guide for trouble-shooting;
   disassembly, repair, and re-assembly instructions; and alignment, adjusting, balancing and
   checking instructions.

F. Provide servicing and lubrication schedule, and list of lubricants required.

G. Include manufacturer's printed operation and maintenance instructions.

H. Include sequence of operation by controls manufacturer.

I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams
   required for maintenance. Proprietary information to be included.
   1. Predicted life of parts subject to wear.
   2. Items recommended to be stocked as spare parts.

J. Provide control diagrams by controls manufacturer as installed.

K. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.

L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and
   control diagrams.
M. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

N. Additional Requirements: As specified in individual product specification sections.

O. Additional requirements for operating and maintenance data: Reference respective sections of Specifications.

1.06 CLOSE OUT SUBMITTAL - VOLUME 3

A. Furnish four (4) complete sets of Project Warranty, Operation and Maintenance Data.

B. Volume 3 of Close Out Submittal shall be submitted along with Volume 1 and 2 as defined in Section 01 7000, Article 1.07.

C. Volume 3 Format shall be prepared as per Section 01 7000, Article 1.08. If two or more binders are required, identify as Volume 3A, 3B, etc.

D. Contents of this volume to be in the following format:
   1. Table of Contents indicating complete contents. Relate to tab dividers.
   2. Cover sheet or sheets giving complete Project Name, Contractor's and Subcontractors' Name, Address, Phone Number, Name of Project Superintendent, Project Manager and related general information
   3. Division 0: List Architect and Engineers complete with Name, Address, Telephone Number
   4. Division 1A: General Warranties, Agreements and Bonds
      a. Contractor's Certification as described in Items 1 thru 6 under Final Inspection in Section 01 7000 Contract Close Out, Para. 1.04A
      b. Contractor's Warranty of Work
   5. Division 1B: Certificates and Acceptance
      a. Certificate of Substantial Completion
   6. Division 1C: Subcontractors and Materials Suppliers
      a. Provide a complete listing of subcontractors and materials suppliers including company name, address, phone number, contact person and local representative.
      b. Include complete product description with each subcontractor or material supplier.
   7. Division 1D: Maintenance Materials
      a. List materials and parts furnished for the Owner's use under this contract.
   8. Division 2 thru 33: Technical Data
      a. Provide warranties, agreements, maintenance service and operation manuals, and related data as required by each Section of Specifications. Furnish preprinted copies of each manufacturer's maintenance service and use instructions as required by the Specifications.
      b. Reference any oversize documents that cannot be neatly folded and bound in this binder and furnish separately with proper identification.
      c. When manufacturer's cut sheets are used for product identification, plainly mark the specific items included in this Project.

1.07 INSTRUCTION OF OWNER'S PERSONNEL

A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment and maintenance of all products, equipment and systems.
B. Do not start-up or operate equipment without written consent of the Owner or his authorized agent.

C. For equipment requiring seasonal operation, perform instructions for other seasons within six months.

D. Use operation and maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.

E. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

PART 2 - PRODUCTS
Not used

PART 3 - EXECUTION
Not used

END OF SECTION
PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED
   A. Final cleaning of project.

1.02 RELATED REQUIREMENTS
   A. Document – General Conditions: Cleaning up.
   B. Section 01 7000 – Contract closeout: Closeout procedures.
   C. Individual specification sections: Specific cleaning for product or work.

1.03 DESCRIPTION
   A. Execute cleaning prior to inspection for substantial completion of each designated portion of the work.

PART 2 - PRODUCTS

2.01 CLEANING MATERIALS
   A. Use materials which will not create hazards to health or property, and which will not damage surfaces.
   B. Use only materials and methods recommended by manufacturer of material being cleaned.

PART 3 - EXECUTION

3.01 CLEANING
   A. In addition to removal of debris and cleaning specified in other sections, clean interior and exterior exposed-to-view surfaces.
   B. Remove temporary protection and labels not required to remain.
   C. Clean finishes until free of dust, stains, films and other foreign substances.
   D. Clean transparent and glossy materials to a polished condition; remove foreign substances. Polish reflective surfaces to a clear shine.
   E. Clean and damp mop resilient and hard-surface floors as specified.
   F. Clean permanent filters of ventilating equipment and replace disposable filters when units have been operated during construction. In addition, clean ducts, blowers and coils when units have been operated without filters during construction.
   G. Clean light fixtures and lamps.
   H. Maintain cleaning until substantial completion.

END OF SECTION
PART 1  GENERAL

1.01 SUMMARY

A. Demonstration of products and systems to be commissioned and where indicated in specific specification sections.

B. Training of Owner personnel in operation and maintenance is required for:
   1. All software-operated systems.
   2. HVAC systems and equipment.
   3. Plumbing equipment.
   4. Electrical systems and equipment.
   5. Items specified in individual product Sections.

C. Training of Owner personnel in care, cleaning, maintenance, and repair is required for:
   1. Roofing, waterproofing, and other weather-exposed or moisture protection products.
   2. Finishes, including flooring, wall finishes, ceiling finishes.
   3. Fixtures and fittings.
   4. Items specified in individual product Sections.

1.02 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Draft Training Plans: Owner will designate personnel to be trained; tailor training to needs and skill-level of attendees.
   1. Submit to Architect for transmittal to Owner.
   2. Submit not less than four weeks prior to start of training.
   3. Revise and resubmit until acceptable.
   4. Provide an overall schedule showing all training sessions.
   5. Include at least the following for each training session:
      a. Identification, date, time, and duration.
      b. Description of products and/or systems to be covered.
      c. Name of firm and person conducting training; include qualifications.
      d. Intended audience, such as job description.
      e. Objectives of training and suggested methods of ensuring adequate training.
      f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
      g. Media to be used, such as slides, hand-outs, etc.
      h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.

C. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
   1. Include applicable portion of O&M manuals.
   2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
   3. Provide one extra copy of each training manual to be included with operation and maintenance data.

D. Training Reports:
   1. Identification of each training session, date, time, and duration.
   2. Sign-in sheet showing names and job titles of attendees.
   3. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.

E. Video Recordings: Submit digital video recording of each demonstration and training session for Owner's subsequent use.
   1. Format: DVD Disc.
   2. Label each disc and container with session identification and date.
1.03 QUALITY ASSURANCE

A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
   1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
   2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 DEMONSTRATION - GENERAL

A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.

B. Demonstrations conducted during Functional Testing need not be repeated unless Owner personnel training is specified.

C. Demonstration may be combined with Owner personnel training if applicable.

D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.
   2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.

3.02 TRAINING - GENERAL

A. Conduct training on-site unless otherwise indicated.

B. Owner will provide classroom and seating at no cost to Contractor.

C. Do not start training until Functional Testing is complete, unless otherwise specified.

D. Provide training in minimum two hour segments.

E. Training schedule will be subject to availability of Owner's personnel to be trained; re-schedule training sessions as required by Owner; once schedule has been approved by Owner failure to conduct sessions according to schedule will be cause for Owner to charge Contractor for personnel "show-up" time.

F. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
   1. The location of the O&M manuals and procedures for use and preservation; backup copies.
   2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
   3. Typical uses of the O&M manuals.

G. Product- and System-Specific Training:
   1. Review the applicable O&M manuals.
   2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
   3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
   4. Provide hands-on training on all operational modes possible and preventive maintenance.
   5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
   6. Discuss common troubleshooting problems and solutions.
   7. Discuss any peculiarities of equipment installation or operation.
   8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
9. Review recommended tools and spare parts inventory suggestions of manufacturers.
10. Review spare parts and tools required to be furnished by Contractor.
11. Review spare parts suppliers and sources and procurement procedures.

H. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

END OF SECTION
PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnishing of and paying for all labor, services, appliances, materials and equipment necessary for execution, installation and completion of all work specified herein and as shown on drawings.

B. Section Includes:
   1. Interior and exterior demolition work required to protect, install, brace, support and adjoin the existing work with new work required by this contract.
   2. Cutting and bracing required to provide new openings within existing work for new work required by this contract.
   3. Erection, maintenance and removal of dust proof, sound resistant and protection partitions as required for the duration of this work under coordination with the Owner.
   4. Removal and salvage of such debris and materials generated by the Work including complete disposal away from the project site.
   5. Delivery of salvage materials to the location designated by the Owner for those materials defined herein to be salvaged to the benefit of the Owner.

1.02 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 01 7200.

B. Accurately record actual location of capped utilities.

1.03 REGULATORY REQUIREMENTS

A. Obtain required permits from authorities.

B. Notify affected utility companies before starting work and comply with their requirements.

C. Do not close or obstruct egress width to exit.

D. Do not disable or disrupt building fire or life safety system without prior written notice to the Owner.

E. Conform to procedures applicable when discovering hazardous or contaminated materials.

1.04 SEQUENCING

A. Sequence work under the provisions of Section 01 1000.

1.05 SCHEDULING

A. Schedule work under the provisions of Section 01 3000.

B. Schedule work to coincide with new construction.

C. Describe demolition removal procedures and schedule.

D. Perform work between the hours of 8:00 a.m. and 5:00 p.m.
PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that areas of the building to be demolished are unoccupied and discontinued in use by the Owner. Verify schedule of demolition with construction sequencing schedule.

B. Do not commence work until conditions are acceptable to Owner.

3.02 PREPARATION

A. Erect and maintain temporary partitions to prevent spread of dust, odors and noise to permit continued Owner occupancy, as specified in Section 01 5000.

B. Protect existing materials which are not to be demolished.

C. Arrange for, and verify termination of utility services, if any, to include removing and/or capping lines, etc., as applicable. Do not disconnect services to occupied areas; coordinate this work with the Owner.

3.03 PROTECTION

A. Execute all demolition work in an orderly and careful manner with due consideration for existing structure and the Owner's operation including any parts of the surrounding areas which are to remain. Barricade and cover as necessary to protect pedestrians, workmen and adjacent properties. Protect any existing active service lines, indicated or not. Repair and make good any damage to adjoining surfaces caused by these operations.

3.04 DISPOSITION OF REMOVED MATERIAL

A. All material removed under this contract, which is not to be salvaged or reused, shall become the property of the Contractor and be promptly removed from the site. At all times use movable debris boxes; convey the material through the building. Do not store or permit debris to accumulate on the site.

B. Do not burn or bury material on site. Periodically broom clean to allay dust.

3.05 DEMOLITION WORK

A. Floors:
   1. Remove, cut and/or brace concrete floors where or as required to permit installation of new work. Exercise care to avoid damage to the Owner's waterproofing systems and underground subsurface drainage systems.
   2. Remove resilient flooring, carpet and/or other finished floor materials as shown on Contract Documents, or as required, including adhesive to the extent that subsurfaces will present a smooth, even plane, ready for application of new materials.
   3. Holes, as required in existing floor slabs for new pipe, ducts and conduit as shown on drawings or as required, shall be removed and repaired.
4. Removal of and/or patching of floor slabs above grade must be consistent with maintaining fire integrity of the Owner's structure and to match existing or as required by governing officials.

B. Walls:
1. Remove interior and/or exterior walls and/or partitions including concrete block, precast concrete, brick, gypsum, plaster, partitions, etc. as shown on the drawings or as required to install and align with new work required under this Contract. Maintain fire resistance integrity of all walls having such fire integrity.
2. Walls or sections of walls shall not be permitted to fall on floors of the building in masses to exceed safe carrying capacity of floors. Existing floors shall be properly protected with 1/2 inch plywood both sides of a partition to be demolished. Do all demolition work required to complete this work.

C. Ceilings:
1. Remove all ceilings as shown on drawings and as necessary to complete all work shown on the drawings and/or required.

D. Roofing and/or Waterproofing:
1. Remove only as required for new construction and maintain Owner's waterproofing integrity by temporary and/or permanent methods as dictated by construction sequencing. Reinstall flashing, roofing, and/or waterproofing as applicable in a manner to assure water-tightness.

E. New Openings in Existing Walls, Floors or Roof:
1. Cut new openings where required, of correct size to permit installation of frames, anchors, curbs, etc. as required for new work. Coordinate with others for installation of new work.

3.06 SALVAGE MATERIALS

A. Certain materials, as and if noted on the drawings, shall be carefully removed, protected, reused and/or delivered to the Owner for his future use as shown on drawings or specified herein. Extreme care shall be exercised to prevent chipping, breakage, bending and mishandling of all materials. All material not salvaged or to be reused by the Contractor shall become the property of the Contractor and shall be removed promptly from the site at no additional expense to the Owner. Coordination of salvaged material shall occur prior to beginning demolition so as to not hinder the progress of this work.

1. The following materials and/or equipment is to be salvaged by the Contractor and delivered to the Owner's storage area, as and where directed by the Owner.
   a. Existing Toilet Room and Break Room accessories such as Paper Towel Dispensers, Soap Dispensers, Toilet Paper Dispensers, etc. shall be salvaged and turned over to the Owner.
   b. Existing Exterior Window Mini Blinds are to be salvaged and turned over to the Owner.

3.07 CLEANING

A. On completion of demolition work, leave area and adjacent areas clean and satisfactory to local authorities and the Owner. Areas in use by the Owner shall have all debris caused by this Contractor removed at the end of each work day.

END OF SECTION
PART 1  GENERAL

1.01  SCOPE OF WORK

A. Furnishing of and paying for all labor, services, appliances, materials, and equipment necessary for execution, installation and completion of all work specified herein and as shown on drawings.

B. Section includes:
   1. All interior concrete block masonry including concrete fill, reinforcing and conventional mortar for reinforced and non-reinforced masonry.
   2. Common brick
   3. Raking and leaving open of all joints to receive caulking, flashing, etc.
   4. Installation of various materials, devices and anchors furnished by other sections of this specification. Such items are to be installed in masonry work by this section with other sections furnishing materials complete with erection and location information and drawings as required. Refer to Section 013900 for coordination.
   5. Portland Cement type mortar
   6. Grout fill and reinforcing in all metal door and borrowed light frames.
   7. Masonry type ties, reinforcing, and other embeds.
   8. Concrete fill and reinforcing in block work including bond beams.
   9. Any other items or equipment necessary incidental to the completion of all work specified herein.
   10. Furnishing test specimens and samples of material as specified.
   11. Cleaning all masonry units and removing surplus material and waste.
   12. Grout, seal and caulk all interior masonry to steel deck above for sound control.
   13. Furnishing and installing any bracing, forming, and shoring in conjunction with and in the course of constructing the concrete masonry and not provided in other sections.
   14. Replacing, patching, and pointing of existing block work within existing building where indicated on the drawings or as required by construction within all areas to be remodeled and repaired.

1.02  PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

A. Built-in items of various materials, including inserts, plates, windows, security and non-security door frames, devices and anchors furnished by other sections of this specification. Such items are to be installed in masonry work by this section with other sections furnishing materials complete with erection and location information and/or drawings as required.

1.03  REFERENCES

A. The following documents of issue shown or latest issue form a part of this specification to the extent specified herein.
   1. American Concrete Institute (ACI):
      a. Building Code Requirements for Concrete Masonry Structures (ACI 530/530.1/ERTA, 2011).
   2. National Concrete Masonry Association (NCMA):
      b. Specifications for the Design and Construction of Load-Bearing Concrete Masonry (TR-75B-79).
B. Brick Institute of America (BIA):
1. BIA-1C - Cold Weather Masonry Construction
2. BIA-7 REV 7A & 7B REV (latest edition) - Water Resistance, Design and Detailing
3. BIA-8A - Portland Cement Mortar
4. BIA-18, 18A, 18B - Differential Movement
5. BIA-23 REV & 23A - Efflorescence, Causes, Prevention and Control
6. BIA-28B - Brick Veneer/Steel Stud Walls, 2005
7. BIA-46 - Maintenance & Brick Masonry, 2005

C. American Society for Testing and Materials (ASTM):
8. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.
15. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale); 2013.
22. ASTM C140/C140M - Standard Test Methods of Sampling and Testing Concrete Masonry Units and Related Units; 2014.
27. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale); 2014.
33. ASTM C652 - Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale); 2014.

D. In the event of conflict between documents referenced herein and other detail content of this specifications, the detail content herein shall be considered a superseding requirement.

1.04 SUBMITTALS

A. Submit under provisions of Section 013000.

B. Product Data: Provide data on concrete block, reinforcement, anchorage, ties, and accessories.

C. Design Mix: Indicate Proportion or Property Method used, required environmental conditions, and admixture limitations.

D. Shop drawings for reinforcing detailing fabrication, bending, and placement of unit masonry reinforcing bars. Comply with ACI 315 “Details and Detailing of Concrete Reinforcement” showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of masonry reinforcement.
E. Material certificates for the following, signed by manufacturer and Contractor certifying that each material complies with requirements.
   1. Each different cement product required for mortar and grout including name of manufacturer, brand, type, and weight slips at time of delivery.
   2. Each material and grade indicated for reinforcing bars.
   3. Each type and size of joint reinforcement.
   4. Each type and size of anchors, ties, and metal accessories.

1.05 QUALITY ASSURANCE

A. Testing Agency Qualifications: To qualify for acceptance, an independent testing agency must demonstrate to Architect-Engineer’s satisfaction, based on evaluation of agency-submitted criteria conforming to ASTM C 1093, that it has the experience and capability to satisfactorily conduct the testing indicated without delaying the Work.

B. Preconstruction Testing: Employ and pay a qualified independent testing agency to perform the following pre-construction testing to establish compliance of proposed materials and construction with specified requirements:
   1. Test mortar properties per test methods of ASTM C 270.
   2. Test grout compressive strength per ASTM C 1019.

C. Fire-Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire resistance rating determined per ASTM E 119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by another means, as acceptable to authorities having jurisdiction.

D. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

1.06 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 017200.

B. Submittals

C. Certifications

D. Test Reports

1.07 REGULATORY REQUIREMENTS

A. Conform to UL Assembly requirements for fire-rated masonry construction where shown on drawings.

1.08 MOCKUP PANEL

A. Provide mockup panel under provisions of Section 014000.

B. After approval of concrete block masonry, erect a 4 ft -0 in. wide by 5 ft - 4 in. high minimum sample panels at job site with all laid together in similar configuration to that shown on drawings including horizontal joint between all types and wall backup systems. Include mortar, masonry anchors or ties, tolerances, joint spacing, tooling of joints and alignment.
C. Upon satisfactory fabrication of the sample panels as approved by the Architect, the erected units shall become the standard of workmanship to which all subsequent work shall conform. Any work not conforming to the sample will be replaced without additional cost to the Owner.

1.09 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle product to site under provisions of Section 016000.

B. Deliver material to job site in undamaged condition.

C. Handle concrete masonry unit to prevent damage.

D. Store material off ground to prevent contamination by mud, dust, or materials likely to cause staining or other defects.

E. Deliver cementitious materials in original manufacturer's containers. Store in weathertight enclosure.

F. Cover materials as necessary to protect from elements or contamination.

G. Protect anchors, ties and reinforcement from elements.

H. Store aggregates in a manner to avoid contamination, segregation, and mixing with other size aggregate or other materials.

1.10 ENVIRONMENTAL CONDITIONS

A. Maintain materials and surrounding air temperatures to minimum 50 degrees F prior to, during, and 48 hours after completion of masonry work.

B. Protection of Masonry: During erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
   1. Extend cover a minimum of 24 inches (600 mm) down both sides and hold cover securely in place.
   2. Where one wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches (600 mm) down face next to unconstructed wythe and hold cover in place.
   3. Walls not covered as noted above are to be removed entirely and replaced.

C. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls.

D. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
   1. Protect base of walls from rain-splashed mud and mortar splatter by coverings spread on ground and over wall surface.
   2. Protect sills, ledges, and projections from mortar droppings.
   3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
   4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt on completed masonry.
E. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit masonry damaged by frost or freezing conditions. Comply with the following requirements:

1. Cold-Weather Construction: When the ambient temperature is within the limits indicated, use the following procedures:
   a. 40 to 32 deg. F (4 to 0 deg. C): Heat mixing water or sand to produce mortar temperatures between 40 and 120 deg. F (4 and 49 deg C).
   b. 32 to 25 deg. F (0 to -4 deg. C): Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg. F (4 and 49 deg C). Heat grout materials to produce grout temperatures between 40 and 120 deg. F (4 and 49 deg C). Maintain mortar and grout above freezing until used in masonry.
   c. 25 to 20 deg. F (-4 to -7 deg. C): Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg. F (4 and 49 deg C). Heat grout materials to produce grout temperatures between 40 and 120 deg. F (4 and 49 deg C). Maintain mortar and grout above freezing until used in masonry. Heat masonry units to 40 deg. F (4 deg. C) if grouting. Use heat on both sides of walls under construction.
   d. 20 deg. F (-7 deg. C) and Below: Heat mixing water and sand to produce mortar temperatures between 40 and 120 deg. F (4 and 49 deg C). Heat grout materials to produce grout temperatures between 40 and 120 deg. F (4 and 49 deg C). Maintain mortar and grout above freezing until used in masonry. Heat masonry units to 40 deg. F (4 deg. C). Provide enclosures and use heat on both sides of walls under construction to maintain temperatures above 32 deg. F (0 deg. C) within the enclosures.

2. Cold-Weather Protection: When the mean daily temperature is within the limits indicated, provide the following protection:
   a. 40 to 25 deg. F (4 to -4 deg. C): Cover masonry with a weather-resistant membrane for 48 hours after construction.
   b. 25 to 20 deg. F (-4 to -7 deg. C): Cover masonry with insulating blankets or provide enclosure and heat for 48 hours after construction to prevent freezing. Install wind breaks when wind velocity exceeds 15 mi./h (25 km/h).
   c. 20 deg. F (-7 deg. C) and Below: Provide enclosure and heat to maintain temperatures above 32 deg. F (0 deg. C) within the enclosure for 48 hours after construction.

3. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg. F (4 deg. C) and above and will remain so until masonry has dried out, but not less than 7 days after completion of cleaning.

F. Hot-Weather Requirements: Protect unit masonry work when temperature and humidity conditions produce excessive evaporation of water from mortar and grout. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 deg. F (38 deg. C) and above.

1.11 COORDINATION

A. Coordinate work under provision of Section 013900.

B. Coordinate the work between subcontractors installing products under Divisions 05, 07, 23 and 26 and all other subcontractors, separate contractors or parties to this work as essential and required under this Section.

PART 2 PRODUCTS

2.01 BUILDING BRICK (COMMON BRICK)

A. May be standard or modular, meeting ASTM C62 grade MW. Use in unexposed locations. Do not use to piece out concrete block.
2.02 CONCRETE MASONRY UNITS

A. Hollow Load Bearing Block Units: Two core blocks conforming to ASTM C90, Grade N, Type I Moisture Controlled to maximum of 30% at time of delivery, light weight. f’m = 1500 psi per ASTM E447.

B. Solid Load Bearing Block Units: ASTM C145, Grade N, Type I Moisture Controlled to maximum of 30% at time of delivery.

C. Hollow or Solid Non-Load Bearing Block Units: Two core blocks conforming to ASTM C129, Grade N, Type I Moisture Controlled to maximum of 30% at time of delivery, light weight, f’m = 1500 psi per ASTM E447

D. All concrete masonry units where designated within fire-rated masonry walls shall be Fire-rated bearing UL Designation and/or other equivalent independent testing agency approved by Regulatory Code Agencies.

E. Provide special shapes where required for lintels, corner jambs, headers, bond beams and other special conditions. Use 4", 6", 8" or 12" units where shown on drawings and/or required during construction. Conventional units to be 15-5/8" x 7-5/8" x 7" x 5/8" with two (2) cores.

F. Provide special shapes where required for lintels, corner jambs, headers, bond beams and other special conditions.

G. Obtain all masonry units from one manufacturer for uniform texture.

2.03 REINFORCEMENT AND ANCHORAGE

A. Block (only):
   1. "Dur-O-Wal", or approved equivalent, standard weight hot dipped galvanized truss type with width 2 inches less than wall thickness. Space 16 inches o.c. starting 8 inches above floor and continue to full wall height. Place in first course over all openings and extend 2'-0" minimum each side of openings. Provide matching "L" and "T" units.
   2. Use in all concrete block and/or brick free standing walls and/or parapets.

B. Block to Steel Column:
   1. "Dur-O-Wal” Column Seismic Anchors or approved equivalent in 12 gauge or 1/4 inch diameter in standard hot dipped galvanized bright finish with Triangle Ties in standard 3/16 inch diameter hot dipped galvanized wire by length required. Weld to steel columns.
   2. Spaced 16 inches o.c. vertically. Provide in proper length for minimum 3 inches brick embedment.

C. Reinforcement Bars in Seismic Walls:
   1. Provide deformed bars of following grades complying with ASTM A 615, except as otherwise indicated.
      a. Provide Grade 60 for bars No. 3 to No. 18, except as otherwise indicated.
      b. Where No. 2 bars are shown, provide plain, round, carbon steel bars, ASTM A 675, Grade 80.
      c. Shop-fabricate reinforcement bars which are shown to be bent or hooked, unless shown to be field-bent on plans.

D. Other Ties: Per BIA requirements (Standard of Industry) as approved by the Architect for Seismic application.
2.04 FLASHING

A. As specified in Division 07.

2.05 RIGID ANCHORS

A. General: Fabricate from steel bars as follows:
   1. 1-1/2 inches (38 mm) wide by 1/4 inch (6.4 mm) thick by 12 inches (300 mm) long, with ends turned up 3 inches (75 mm).

2.06 MISCELLANEOUS ANCHORS

A. Anchor Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153, Class C; of diameter and length indicated and in the following configurations:
   1. Headed bolts.

2.07 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Type 2, Class A, Grade 1; compressible up to 35 per cent; of width and thickness indicated; formulated from the following material:
   1. Neoprene.

B. Preformed Control-Joint Gaskets: Material as indicated below, design to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as depicted on the Drawings.
   1. Wide-flange PVC complying with ASTM D2287, Type 654-4, with a Durometer hardness of 85±5 when tested in accordance with ASTM D2240.
   2. Provide with corner and tie accessories cement fused joints.
   3. Provide at all interior and exterior expansion and control joints in unit masonry as depicted on the Drawings.

C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

D. Cell Vent: Dur-O-Wall No. D/A 1006.

2.08 MORTAR

A. Portland Cement:
   1. ASTM C150, Type 1, Standard American Brand: Gray

B. Masonry Cement: Do not use.


D. Mortar Aggregate:
   1. All sand for masonry work shall conform to ASTM C144.
      a. For joints 3/8 inch and larger - White, graded as follows:
         100 percent passing #8 screen - 30 percent passing #50 screen
      b. For joints less than 3/8 inch - White, graded as follows:
         100 percent passing #16 screen - 40 percent passing #50 screen

E. Grout Aggregate: ASTM C404
F. Water: Clean, drinkable from City water mains

2.09 ADMIXTURES

A. All admixtures must be approved in writing by the Architect prior to use.

2.10 MORTAR MIXES

A. Mortar for all masonry walls: ASTM C270 Type M using the Property Method to achieve 2500 psi in 28 days for below grade. Type S using the Property Method to achieve 1800 psi in 29 days for all other applications.

B. Use Portland cement mixtures only.

2.11 MORTAR MIXING

A. Thoroughly mix mortar ingredients in quantities needed for immediate use in accordance with ASTM C270.

B. The method of measurement of materials shall be such that the specified proportions of the material can be controlled and accurately maintained in accordance with the applicable mixing requirements. (Shovel is not acceptable.)

C. If water is lost by evaporation, retemper only within two hours of mixing.

D. All mixing boards, mixing equipment and batching devices shall be kept clean at all times.

2.12 GROUT MIXES

A. Grout for Unit Masonry: 3000 psi at 28 days mixed in accordance with ASTM C476. Use grout of consistency indicated or, if not otherwise indicated, of consistency (fine or coarse) at time of placement that will completely fill spaces intended to receive grout.

1. Use fine grout in grout spaces less than 2 inches (50 mm) in horizontal dimension unless otherwise indicated.

2. Use coarse grout in grout spaces 2 inches (50 mm) or more in least horizontal dimension unless otherwise indicated.

2.13 GROUT MIXING

A. Mix grout in accordance with ASTM C94.

2.14 CONCRETE FILL

A. Concrete Fill in Bond Beams and other locations as indicated to be 3000 psi concrete per Division 03.

2.15 CLEANING AGENTS

A. Concrete Masonry Units: Use no cleaning agent other than water on masonry surface unless approved by the Architect.

B. Substitution: Under provisions of Section 016000.

2.16 QUALITY CONTROL
A. Mortar Testing:
   1. Testing of Mortar Mix: ASTM C780
   2. Test mortar mix for compressive strength, consistency, mortar aggregate ratio, water content, air content, and splitting tensile strength.
   3. Testing Laboratory shall conduct a minimum of one test per 500 bricks laid.

B. Grout Testing (ACI 531.1 Sect. 4):
   1. When required, make grout tests by the following procedure on samples taken at the site during construction.
      a. Place masonry units having same moisture condition as those being placed on non-absorptive base to form a void for a square prism with a height twice the side and a minimum side of 3 inches.
      b. Line the side faces of the prism with permeable paper (such as paper towel) or porous separator to allow water passage through liner into masonry units.
      c. Fill prism with a fully representative grout sample in two layers with each layer puddled with a puddle stick approximately 1 inch by 2 inch to eliminate air voids.
      d. Level off specimen and maintain in a damp condition.
      e. After 48 hours, remove masonry units and ship prisms to laboratory and store in fog room until testing.
      f. Cap and make compressive strength test with prism in vertical position in accordance with applicable provisions of ASTM C39.
   2. Testing Laboratory shall conduct a minimum of one test per 5000 square feet of wall area or portion thereof.

PART 3 EXECUTION

3.01 EXAMINATION

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

   B. Verify items provided by other sections of work are properly sized and located.

   C. Verify that built-in items are in proper location and ready for roughing into masonry work.

   D. Replace any insulation damaged in transit or handling.

   E. Beginning of installation means installer accepts existing conditions.

3.02 PREPARATION

   A. Direct and coordinate placement of metal anchors supplied by other sections.

   B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

   C. Reinforcement and Anchors: Remove all dirt, ice, loose rust and scale prior to installation.

3.03 COURSING

   A. Establish lines, levels, and coursing indicated. Protect from displacement.
3.04 PROTECTION OF WORK

A. Protect sills, ledges, and offsets from mortar drippings or other damage during construction.

B. Remove misplaced mortar or grout immediately. Protect face materials against staining.

C. Protect the door jambs and corners from damage during construction.

3.05 PLACING AND BONDING

A. Do not install cracked, broken, or chipped masonry units.

B. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

C. Lay hollow masonry units with face shell bedding on head and bed joints.

D. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.

E. Remove excess mortar as work progresses.


G. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

H. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

I. Cut mortar joints flush where waterproofing and/or ceramic tile are shown on drawings.

J. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.

K. Isolate top joint of non-load bearing masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

L. Top joint of masonry partitions abutting structural framing members and decks shall be sealed for sound control with grout and caulked full perimeter with Sound Control Caulking.

M. Place granular masonry insulation full height in all interior walls within all CMU core holes around all Holding Rooms as shown on Drawings.

3.06 REINFORCEMENT AND ANCHORAGES (REINFORCED AND NON-REINFORCED CONCRETE MASONRY UNITS)

A. Install horizontal joint reinforcement 16 inches o.c.
B. Place masonry joint reinforcement in first horizontal joint above openings. Extend minimum 24 inches each side of opening.

C. Place joint reinforcement continuous in first joint below top of walls.

D. Lap joint reinforcement ends minimum 6 inches.

E. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

3.07 MASONRY FLASHINGS

A. Reference Division 07.

3.08 LINTELS

A. Install reinforced unit masonry lintels and steel lintels over openings as scheduled on drawings.

B. Provide reinforcing as scheduled.

C. Use single piece reinforcing bar only.

3.09 GROUTED AND REINFORCED HOLLOW UNIT MASONRY

A. General: Grouted and reinforced hollow unit masonry is defined as hollow masonry units in which certain or all cells are continuously filled with grout and in which reinforcement is embedded. Requirements shall be as follows:

1. All units shall be laid with full mortar beds on the face shells. All head joints shall be filled solidly with mortar for a distance in from the face of the unit not less than the thickness of the longitudinal face shells.

2. Only Type S mortar consisting of Portland cement, lime and aggregate shall be used.

3. End walls and cross webs forming cells to be filled shall be full bedded in mortar to prevent leakage of grout unless the wall is to be poured solid.

4. Bond shall be provided by lapping units in successive vertical courses or by equivalent mechanical anchorage.

5. Vertical cells to be filled shall have vertical alignment sufficient to maintain a clear, unobstructed continuous vertical cell measuring not less than 2 inches by 3 inches. If walls are battered or if alignment is offset, the 2 inches by 3 inches clear opening shall be maintained as measured from course to course. Excessive mortar fins and any other obstructions shall be removed from the cells to be grouted.

6. At the time of laying, all masonry units shall be free of excessive dust and dirt.

7. All cells containing reinforcement shall be filled solidly with grout. Grout shall be a workable mix suitable for pumping without segregation and shall be thoroughly mixed. Grout shall be placed by pumping or an approved alternate method and shall be placed before initial set or hardening occurs. Grout shall be consolidated by puddling or mechanical vibration during placing and reconsolidated after excess moisture has been absorbed but before workability is lost. The grouting of any section of a wall shall be completed in one day with no interruptions greater than one hour.

8. Where the grout pour exceeds 4 feet in height, cleanouts shall be provided by suitable openings in the face shells in the bottom course of each cell to be grouted, or other approved locations. The cleanouts shall be sealed after inspection and before grouting.

9. When the grouting is stopped for one hour or longer, horizontal construction joints shall be formed by stopping the pour of grout approximately 1-1/2 inches below a bed joint.
10. All reinforcing shall be in place prior to grouting. Vertical reinforcing bars shall be held in position at the top, bottom and at intervals not farther apart than 192 bar diameters.

B. Reinforcement:
1. General - All reinforcement shall be accurately cut to length and bent by such methods as will prevent injury to the material. All kinks or bends in the bars caused by handling incident to delivery shall be straightened out without injury to the material before placing it in the masonry.

2. Joint Reinforcement - Masonry joint reinforcement shall be placed so that longitudinal wires are located over face shell mortar beds and are fully embedded in mortar for their entire length with minimum mortar cover of 5/8 inch exposed face of walls. Reinforcement at openings shall extend not less than 24 inches beyond the end of the sills or lintels or to the end of the panel if the distance to the end of the panel is less than 24 inches. Reinforcement shall not be continuous through control joints. Reinforcement shall be lapped 6 inches or more. Factory-fabricated sections shall be installed at corners and wall intersections.

3. Placing Reinforcement:
   a. Minimum Bar Spacing - The minimum clear distance between parallel bars except in columns shall be equal to the nominal diameter of the bar.
   b. Splices in Reinforcement - Splices may be made only at such points and in such manner that the structural strength of the member will not be reduced. Lapped splices shall provide sufficient lap to transfer the working stress of the reinforcement by bond and shear. Minimum lap shall be 48-bar diameters. Welded or mechanical connections shall develop the strength of the reinforcement.
   c. Protection for Reinforcement - All bars shall be completely embedded in mortar or grout. All reinforcement shall have a coverage of masonry not less than the following:
      1) 3 inches for bottom of footings.
      2) 2 inches on vertical members where masonry is exposed to action of weather or soil for bars 5/8 inch and 1-1/2 inches for bars 5/8 inch or less.
      3) 1-1/2 inches for all reinforcement in columns.
      4) 1-1/2 inches on the bottom and sides of beams or girder.
      5) 3/4 inch from the faces of all walls not exposed to action of weather or soil.
      6) 1-bar diameter over all bars, but not less than 3/4 inch at the upper faces on any member, except where exposed to weather or soil in which cases the minimum coverage shall be 2 inches or 3 inches respectively.
      7) Reinforcement consisting of bars or wire 1/4 inch or less in diameter embedded in the horizontal mortar joints shall have not less than 5/8 inch mortar coverage at exposed face of wall.
      8) The thickness of grout or mortar between masonry units and reinforcement shall be not less than 1/4 inch except that 1/4 inch bars may be laid in 1/2 inch horizontal mortar joints, and No. 6 gauge or smaller wires may be laid in 3/8 inch horizontal joints. Vertical joints containing both horizontal and vertical reinforcement shall be not less than 1/2 inch larger than the sum of the diameters of the horizontal and vertical reinforcement contained therein.

3.10 CONTROL JOINTS

A. Interior:
   1. In all interior masonry walls, leave one straight vertical joint, full height of wall, free of mortar in each approximate 50 lineal feet of wall, or 25 lineal feet each way from a corner, not otherwise interrupted, for packing and caulking of each exposed face. Arrange pattern as shown on drawings or as directed by the Architect.
   2. Where masonry surfaces abut concrete walls, columns and/or other dissimilar materials, relief joints shall be left free of mortar full height for caulking.
3.11  BUILT-IN WORK

A. As work progresses, build in metal door and glazed frames, anchor bolts, plates and other items furnished by other sections.
   1. All steel door frames and borrowed light frames shall be filled solid with grout as laying progresses. Fill head flush.

B. Build in items plumb and level.

C. Bed anchors of metal doors and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.

D. Solidly grout spaces around built-in items.

E. Provide outside joint around exterior door and window frames and other framed wall openings:
   2. Rake and tool smooth to a uniform depth of 1/2 inch.

3.12  TOLERANCES

A. Maximum variation from plumb: 1/4 inch in 10 feet (non-cumulative).

B. Maximum variation from level or grades for exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines: 1/4 inch in 20 feet. (non-cumulative).

C. Maximum variation of linear building line from an established position in plan and related portions of columns, walls and partitions: 1/2 inch in any bay or 20 feet. (non-cumulative).

D. Maximum variation in cross-sectional dimensions of columns in thickness of walls: Not less than 1/4 inch smaller nor more than 1/4 inch larger.

3.13  POINTING AND CLEANING

A. Keep work clean during laying, particularly concrete block which shall be brushed and/or wiped clean as laying progresses per manufacturer’s instructions. Remove all mortar droppings on all work at least daily. Keep mortar from contacting other work.

B. When work is complete, point all exposed masonry, filling all holes, defects, etc., remove all loose mortar, cut out defective joints and repoint if required.

C. Accomplish final cleaning as follows: All cleaning operations shall start at the top and work down.
   1. Concrete Block:
      a. Clean all concrete block with stiff fiber brushes. Use water if necessary. Clean closely behind before mortar has taken final set. Use no acid.

3.14  CLEANING

A. Remove all material, scrap, etc. from site and clean up all residue from this work.

END OF SECTION
PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnishing of and paying for all labor, materials, services, appliances and equipment necessary for the execution, installation and completion of all work specified herein and shown on the drawings.

B. Work included: All metal fabrication items listed, but not necessarily limited to the following:
   1. Aluminum Pipe Handrail System
   2. Shop fabricated steel and aluminum items.
   3. Hot-dipped galvanized miscellaneous steel lintel angles and plates which support brick veneer and/or other exposed veneer surfaces.
   4. Miscellaneous steel channels, angles, tubing, pipes, clips, plates, and/or other miscellaneous steel members shown on drawings. All exterior steel members to be galvanized.
   5. Shop Painting and Field Touch-up Painting.

1.02 REFERENCES


B. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2015.


O. ASTM A325M - Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength (Metric); 2014.

P. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2013.


AB. ASTM B211M - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold-Finished Bar, Rod, and Wire (Metric); 2012.


AG. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.


AI. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel; International Accreditation Service, Inc; 2011.

AJ. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 1999 (Ed. 2004).


1.03 SUBMITTALS

A. Submit under provisions of Section 013000.

B. Shop Drawings:
   1. Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners and accessories. Include erection drawings, elevations, and details where applicable.
   2. Indicate welded connections with AWS A2.0 welding symbols. Indicate net weld lengths.

C. Manufacturer’s Installation: Provide setting drawings, templates and directions for the installation of such devices.

D. Welders Certificates: Submit as per Article 1.04.

1.04 QUALIFICATIONS

A. Welders’ Certificates: Submit under provisions of Section 013000, certifying welders employed on the work, verifying AWS qualification within the previous 12 months.

1.05 DELIVERY, STORAGE AND HANDLING

A. Delivery, store, protect and handle products to site under provisions of Section 01600.
B. Delivery of materials to be installed under other sections:
   1. Anchor bolts, embeds, inserts, sleeves, stair attachments steel security bar grating frames and other anchorage devices which are embedded in cast-in-place concrete or masonry construction shall be delivered to the project site in time to be installed before the start of concrete operations or masonry work.

C. Storage of materials:
   1. Steel members which are stored at the project site shall be above ground on platforms, skids or other supports.
   2. Steel shall be protected from corrosion.
   3. Other materials shall be stored in a weathertight and dry place until ready for use in the work.
   4. Packaged materials shall be stored in their original unbroken package or container.

1.06 FIELD MEASUREMENTS

A. Verify exact field measurements.

PART 2 PRODUCTS

2.01 MATERIALS

A. Structural steel shapes shall meet ASTM A 36. All surfaces of exterior members are to be galvanized.

B. Structural steel plates shall meet ASTM A 283, Grade C. All surfaces of exterior members are to be galvanized.

C. Steel bolts and fastenings shall meet ASTM A 307, Grade A. All surfaces of exterior members are to be galvanized.

D. Steel bars shall meet ASTM A 575. All surfaces of exterior members are to be galvanized.

E. Hollow structural tubing shall meet ASTM A 36, A 500 and A 501. All surfaces of exterior members are to be galvanized.

F. Steel pipe shall meet ASTM A 120 for standard weight (Schedule 40) pipe and ASTM A 53, Type E, Grade E. All surfaces of exterior members are to be galvanized.

G. Aluminum extrusions shall meet ASTM B 211, temper best suited for purpose.

H. Aluminum plates and sheets shall meet ASTM B209, temper best suited for purpose.

I. Fastenings shall be stainless steel for exterior. Match adjacent material for interior. Stainless steel shall meet AISI 300 series. Exposed screws shall be Phillips flat head, countersunk. Use bolts for field connections only. Provide washers under heads and nuts. Draw all nuts tight and nick threads of permanent connections. Use beveled washers where bearing is on sloped surfaces. Where screws must be used for permanent connections in ferrous metal, use flat head type, countersunk, with screw slots filled and finished smooth and flush.

J. Rough Hardware: Provide bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete and other structures. Manufacture or fabricate items of sizes, shapes and dimensions required. Provide malleable
iron washers for heads and nuts which bear on wood structural connections; elsewhere furnish steel washers.

K. Loose Bearing and Leveling Plates: Provide loose bearing and leveling plates for steel items bearing on concrete construction, made flat, free from warps or twists, and of required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required. Galvanize after fabrication.

L. Miscellaneous Framing and Supports: Provide miscellaneous framing and supports which are not part of structural steel framework, as required to complete the Work. Fabricate miscellaneous units to sizes, shapes and profiles shown; or, if not shown, of required dimensions to receive adjacent other work to be retained by framing. Fabricate the miscellaneous units from structural steel shapes, plates and steel bars of welded construction with mitered joints for field connection, unless otherwise shown. Cut, drill and tap units to receive hardware. Equip units with integrally welded anchors for casting into concrete or building into masonry, and furnish inserts if units must be installed after concrete is placed. Galvanize miscellaneous frames and supports where indicated, including all exterior steel members. All steel lintel angles and plates supporting Brick Veneer shall be hot-dipped galvanized 1.2 mil thickness.

M. Aluminum Pipe Handrail System: The aluminum pipe handrail system shall be constructed with mechanically fastened, smooth and continuous A.D.A. Railing System of aluminum fittings as manufactured by The Hollaender Manufacturing Company, 10285 Wayne Avenue, Box 156399, Cincinnati, Ohio 45215-6399. The aluminum pipe shall be Schedule 40 with 1.66” O.D. The finish of the system shall be clear anodized conforming to AA-M12-C22-A41, Class 1. Provide #82A Handrail Wall Bracket with #84AL Handrail Returns. The design of the handrail bracket shall provide a 1 ½” clearance between the post and the rail, and allow for adjustment of the rail to match the angle of the ramp or stairs. Handrail brackets and pipe fittings shall provide a continuous, uninterrupted gripping surface with no sharp edges or projections. The bracket shall be externally connected to the wall by means of an anodized aluminum, tubular rivet nut, and austenitic 302 alloy stainless steel, hexagon socket, button head, cap screw. The bracket shall be connected to the underside of the rail by means of two stainless steel, flat countersunk head, Type F self-tapping screws that conform to ANSI/ASME-B18.6.4. Pipe fittings shall be internally connected to the pipe by means of an internal double tang, expanded by an austenitic 302 alloy stainless steel, internal/external, reverse knurl, cup point, hexagon socket set screw. Pop rivets, sheet metal screws, and adhesives shall not be an acceptable fastening method. The brackets and fittings shall be of high-tensile aluminum-magnesium alloy 535.0 manufactured in compliance with ASTM B26, cast from high-purity ingot 535.2 conforming to ASTM B179.

N. Primer used to touch up galvanized surfaces shall be manufacturer's standard or similar to ZRC Chemical Products Company of Quincy, Massachusetts, ZRC Cold Galvanizing Compound.

PART 3 EXECUTION

3.01 WORKMANSHIP

A. Metal work shall be well formed to shape and size with sharp lines, angles, and arises. Shearing and punching shall leave clean, true lines and surfaces. Thickness of metal, details of metal, details of assembly and support shall give ample strength and stiffness for the intended purpose.

B. Conceal fastenings where practicable. Form joints exposed to weather to exclude water. For permanent connections use welds where possible. Welds exposed to view shall be ground and dressed smooth. Provide lugs, clips, anchors and miscellaneous fastenings necessary for complete assembly and installation. Miter corners and angles of exposed moldings and frames.
C. Grout frames, plates, sills, bolts and similar items with non-shrink grout as specified in Section 04 2000. Set railings and similar items shown or required to set in sleeves or cans with molten lead or quick setting anchor cement.

D. Make trim in longest lengths possible, locate joints symmetrically. Fit adjacent pieces with hairline joints and aligned surfaces. Space exposed screws evenly and symmetrically.

3.02 PREPARATION FOR MISCELLANEOUS ITEMS

A. Furnish setting drawings, diagrams, templates, instructions and directions for installation of anchorages, such as concrete inserts, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete construction. Coordinate delivery of such items to project site.

3.03 SETTING LOOSE PLATES

A. Clean concrete bearing surfaces to any bond-reducing material and roughen to improve bond to surfaces. Clean the bottom surface of bearing plates. Set loose leveling and bearing plates on wedges or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims; but if protruding, cut off flush with the edge of the bearing plate before packing with grout. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.04 FASTENING TO IN-PLACE CONSTRUCTION

A. Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction including threaded fasteners for concrete inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.

3.05 CUTTING, FITTING AND PLACEMENT

A. Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, and make plumb, level, true and free from rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete or similar construction. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.

3.06 FIELD WELDING

A. Comply with AWS code for procedures of manual shielded metal-arc welding, appearance and quality of weld made, and methods in correcting welding work.

3.07 PIPE BOLLARDS

A. Shall be set with 4’ − 0” projecting above grade or as shown on the Drawings. Set posts in round concrete filled postholes as shown on drawings.

3.08 SLEEVES

A. Shall be installed proper location prior to the placing of concrete. Set sleeves at proper elevations, spread hairpin anchors and tie into place. Sleeves are not to be elevated with any
material foreign to that used in normal concrete placement. Prior to concrete placement pack all sleeves with paper or cloth wadding. Final installation shall leave sleeves flush with top of the concrete and in true vertical position. Wadding is to remain in the sleeves until posts are set.

3.09 PAINTING AND PROTECTIVE COATING

A. All ferrous metal, except stainless steel and galvanized surfaces, shall be properly cleaned and given one shop coat of Zinc Rich primer. Anchors that are built into masonry shall be coated with asphalt paint unless specified to be galvanized. Metal work to be encased in concrete shall be left unpainted unless specified or noted otherwise. Where hot-dip galvanized or zinc-coated metal is specified or shown, it shall not be shop-primed unless specifically required.

B. Hot-dip galvanizing or zinc coatings applied on products fabricated from rolled, pressed, and forged steel shapes, plates, bars and strips shall comply with ASTM Specification A 123. Hot-dip galvanizing or zinc coatings on assembled steel products shall comply with ASTM Specification A 386. Galvanized surfaces for which a coat of paint is specified shall be chemically treated to provide a bond for the paint. Except for bolts and nuts, all galvanizing shall be done after fabrication.

3.10 TOLERANCES FOR EXPOSED WORK

A. Machine filed and shop assembled mechanical joints shall fit within 1/32”. Install free-standing items to 1/4” of correct position. Items enclosed or recessed in finished surfaces shall be centered in openings unless detailed otherwise. Sizes of each element of an assembly shall be correct within 1/8”. Total size of an enclosed assembly shall be correct within 1/4” clear of opening and not more than 1/8” all around. Total size of a free-standing assembly shall be correct within 1/2”. No part of the hole shall show around screws or bolts, and no extra or unused holes shall show on faces of item.

3.11 PROTECTION AND TOUCH-UP PAINTING

A. Protect miscellaneous metal items from damage until building is turned over to Owner. Immediately after erection, clean field welds, bolted connections and abraded areas of shop paint, and paint exposed areas with same material and thickness used for shop painting. Remove all rust before repriming. Where touch-up is required, sand or steel wool primer coat to feather edge and brush out touch-up to provide a smooth finish surface ready for job painting.

3.12 CLEANING

A. Before final inspection, remove all protective maskings and coverings and clean exposed surfaces of foreign matter. Clean to remove dirt, stains, soil marks and other matter. Aluminum shall be cleaned with plain water containing a mild soap or detergent, or white gasoline, kerosene or distillate. No abrasive agent shall be used on aluminum. At the completion of this work, remove from the site all excess materials and debris. Leave entire work area in a neat and workmanlike condition ready for final inspection.

END OF SECTION
PART 1 - GENERAL

1.01 Requirements: Applicable provisions of Division 0 and Division 1 govern all work specified in this Section.

1.02 Section Includes:
   A. Non-structural dimension lumber framing.
   B. Preservative treated wood materials.
   C. Fire retardant treated wood materials.
   D. Miscellaneous framing and sheathing.
   E. Communications and electrical room mounting boards.
   F. Concealed wood blocking, nailers, and supports.
   G. Miscellaneous wood nailers, furring, and grounds.

1.03 Reference Standards:
   C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
   J. PS 1 - Structural Plywood; 2009.
   L. SPIB (GR) - Grading Rules; 2014.

PART 2 - PRODUCTS

2.01 Material:
   A. Lumber Blocking: Southern Pine fire retardant, Utility Grade or better. The sizes of the lumber blocking shall be as indicated on the Drawings.
   B. Interior Plywood: American Plywood Association, C-D Plugged Interior fire retardant. The thickness of the plywood shall be as indicated on the Drawings.
   C. Exterior Plywood: American Plywood Association, C-D Plugged fire retardant with exterior glue. The thickness of the plywood shall be as indicated on the Drawings.

2.02 Wood Treatment:
   A. Against Decay: Chromated copper arsenate solution or pentachlorophenol impregnated into the lumber or plywood by vacuum pressure in accordance with FS-TT-W-571 and recommended practices of American Wood Preservers Association.
B. Against Flammability: In accordance with ASTM D2898-81 and shall have a flame spread of 25 or less when tested in accordance with ASTM E84-84, Test Method for Surface Burning Characteristics of Building Materials. All fire retardant treated lumber and plywood shall bear a performance identification or certification label of Underwriters Laboratories or Nationwide Consumer Testing Institute as required by national or regional standards for fire retardant treated lumber.

C. Moisture Content:
   1. Lumber: Kiln dried to 19% maximum.
   2. Plywood: Kiln dried to 15% maximum.

2.03 Furnish all rough hardware, such as specified in Section 055000 - Metal Fabrication, and as shown on the Drawings and as may be required for completed installations.

PART 3 - EXECUTION

3.01 Continuous wood plates at sills, copings and in the area of the roof must be installed straight and level. Grout or otherwise shim to obtain required levels. Use lumber in lengths as long as practicable and bolt to substrate at 3'-6" O.C. maximum.

3.02 All framing, blocking, grounds, screeds, etc., shall be cleanly cut and securely fastened by appropriate means and according to industry standards.

3.03 Install fire retardant wood blocking or plywood reinforcing in or upon all drywall partitions that will receive counter tops, cabinets, or other miscellaneous items supported from partitions such as toilet accessories, mirrors, etc., or as indicated on the Drawings.

END OF SECTION
PART 1 GENERAL

1.01 SECTION INCLUDES
A. Specially fabricated cabinet units.
B. Countertops.
C. Cabinet hardware.
D. Factory finishing.
E. Preparation for installing utilities.

1.02 REFERENCE STANDARDS
A. ANSI A135.4 - American National Standard for Basic Hardboard; 2012.
E. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.
G. BHMA A156.9 - American National Standard for Cabinet Hardware; 2010.
J. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
L. PS 1 - Structural Plywood; 2009.
N. WI (CCP) - Certified Compliance Program (CCP); current edition at www.woodworkinstitute.com/certification.
O. WI (MCP) - Monitored Compliance Program (MCP); current edition at www.woodworkinstitute.com/certification.

1.03 SUBMITTALS
A. Product Data: Submit manufacturer’s product data for each product and process specified as work of this section and incorporated into items of architectural woodwork during fabrication, finishing and installation.
B. Samples: Submit the following samples:
   1. Plastic laminate, for each type, color, pattern and surface finish.
C. Shop Drawings: Submit shop drawings for casework showing plans, elevations, ends cross-sections, service run spaces, location and type of service fixtures with lines thereto. Show details and locations of anchorage and fitting to floors, walls and base. Include layout of units with relation to surrounding walls, doors, windows and other building components. Coordinate shop drawings with other work involved.
D. Manufacturer shall field verify all dimensions.

1.04 QUALITY ASSURANCE
A. AWI Quality Standard: Comply with applicable requirements of “Architectural Woodwork Quality Standards” published by the Architectural Woodwork Institute (AWI), except as otherwise indicated.
B. Installers Qualifications: Arrange for installation of architectural woodwork by a firm which can demonstrate successful experience in installing architectural woodwork items similar in type and quality to those required for this project.

1.05 DELIVERY, STORAGE AND HANDLING
A. Protect woodwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.
B. Do not deliver woodwork, until painting, wet work, grinding, and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas. If, due to unforeseen circumstances, woodwork must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS
A. Laminates:
   1. Formica
   2. Or approved equal.
B. Hardware
   1. Doug Mockett (grommets), Manhattan Beach, CA
   2. Knape & Vogt (shelf brackets and standards), Grand Rapids, MI

2.02 FABRICATION, GENERAL
A. Wood Moisture Content Comply with requirements of referenced quality standard for moisture content of lumber at time of fabrication and for relative humidity conditions in the installation areas.
B. Fabricate woodwork to dimensions, profiles, and details indicated with openings and mortises precut, where possible, to receive hardware and other items and work.
1. Ease edges to a 1/16" radius, for corners of cabinets and edges of solid wood (lumber) members less that 1" in nominal thickness, 1/8" radius for edges of rails and similar members over 1" in nominal thickness.
C. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming and fitting.
D. Pre-Cut Openings: Fabricate architectural woodwork with pre-cut openings, where possible, to receive hardware, appliances, plumbing fixtures, electrical work and similar items. Locate openings accurately and use templates or roughing-in diagrams for proper size and shape. Smooth edges of cutouts and, where located in countertops and similar exposures seal edges of cutouts with a water-resistant coating.
E. Measurements: Before proceeding with fabrication of woodwork required to be fitted to other construction, obtain field measurements and verify dimensions and shop drawing details as required for accurate fit.
1. Where sequence of measuring substrates before fabrication would delay the project, proceed with fabrication (without field measurements) and provide ample borders and edges to allow for subsequent scribing and trimming of woodwork for accurate fit.

2.03 ARCHITECTURAL CABINETS AND LAMINATE CLAD
A. Quality Standard: Comply with AWI Section 400 and its Division 400B.
B. Laminated Clad Cabinets: Comply with the following:
   1. Cabinet case component parts shall be manufactured from 3/4" white melamine board.
   2. All interior surfaces of casework shall be finished with 90 gram white melamine.
   3. Laminated Cladding: High pressure decorative laminate complying with NEMA LD 3 and as follows:
      a. Colors, Patterns and Finishes: Formica, "Citadel Warp."
C. Grade: Custom.

D. Style of Cabinet Construction: As indicated.

E. Laminate Grade for Exposed Surfaces: Provide laminate cladding complying with the following requirements for type of surface and grade:
   1. Horizontal Surfaces Other Than Tops: GP-50 (0.050" nominal thickness).
   2. Vertical Surfaces: GP-50 (0.050" nominal thickness).
   3. Edges: GP-50 (0.050" nominal thickness).

F. Semi-Exposed Surfaces (includes drawers): Provide surface materials indicated below.
   1. Kotron or approved equal.

G. Quality Standard: Comply with AWI Section 500 and its Division 500A.

H. Drawers:
   1. Drawers shall be four sided box design, mounted to a separate drawer front. The sides; front and back of the drawer shall be made of white, melamine clad, 1/2" Medium Density Fiberboard Core (MDF). Corners shall be joined with hardwood dowels and screws.
   2. Drawer bottoms shall be of the same material as the box and fasten directly to the sides.
   3. Exposed edges shall be banded with high pressure plastic laminate.

I. Cabinet Door and Drawer Fronts:
   1. Door panels and drawer fronts shall be ¾" white melamine clad Medium Density Fiberboard Core (MDF). Door edges shall be banded with high-pressure plastic laminate. Door and drawer front faces and edges shall be finished with high-pressure plastic laminate.

J. Adjustable Shelves:
   1. Adjustable shelves shall be white melamine covered Medium Density Fiberboard Core (MDF):

K. Drawer rails:
   1. Drawer rails and supports that separate drawer and door openings shall be manufactured from 3/4" white melamine clad Medium Density Fiberboard Core (MDF), and mounted to the casework with metal fasteners and screws. Face edges shall be banded with high-pressure plastic laminate.

L. Joints:
   1. Cabinet components shall be fastened with a combination of dados, metal fasteners, joinery biscuits, dowels, adhesives and screws utilizing a mortise and screw system as appropriate for a particular joint.

M. Base Cabinet Parts:
   1. Base cabinet ends, decks, rails and nailers shall be manufactured from white 3/4", two-sided melamine clad Medium Density Fiberboard Core (MDF).
   2. Provide 4" high x 4" deep toe space at floor.

N. Wall Cabinet Parts:
   1. Wall cabinet ends, tops, bottoms and nailers shall be manufactured from white 3/4", two-sided melamine clad Medium Density Fiberboard Core (MDF).

O. Cabinet Backs:
   1. Standard back for base and wall cabinets shall be ¼" white melamine surfaced Medium Density Fiberboard Core (MDF). Cabinet backs shall fit within a groove ¾" from the back of the cabinet.

P. Cabinet Mounts:
   1. Cabinets shall be fitted with multiple ¾" x 4" nailer strips the width of the cabinet back for mounting to walls.

Q. Exposed finish:
   1. All exposed edged and exterior surfaces of the cabinet component parts, doors and drawer fronts, shall be laminated with high-pressure plastic laminate, bonded with contact adhesive/cement, unless indicated otherwise.

R. Fasteners and Anchors:
   1. Screws: Select material, type, sizes and finish required for each use. Comply with FS FF-S111 for applicable requirement.
2. Anchors: Select material, type, sizes and finish required by each substrate for secure anchorage. Provide non-ferrous metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion-resistance. Provide toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts and anchors, as required, to be set into concrete or masonry work for subsequent woodwork anchorage.

S. Hardware:
1. Hinges:
   a. Hinges shall be fully concealed from view when the door is in the closed position and permit a swing of 180 degrees to fully open. The steel hinge shall incorporate a diecast metal mounting plate and door cup. The hinge shall have adjustment in three dimensions for door alignment. The door cup shall have nylon inserts to capture the door. The hinges shall come with a manufacturer backed lifetime guarantee. Placement and quantity of hinges will be based on three factors: door weight, size and project environment
   1) The number of hinges on a door shall depend on the size and weight of the door. For doors to 24" wide:
      a) Weighing up to 20 pounds: 2 hinges shall be used.
      b) Weighing from 20 to 40 pounds: 3 hinges shall be used.
      c) Weighing from 40 to 60 pounds: 4 hinges shall be used.
   2) Door Height
      a) Doors that are less than 48" in height shall have 2 hinges per door.
      b) Doors from 48" to 60" in height shall have 3 hinges per door.
      c) Doors from 60", but less than 84" in height shall have 4 hinges per door.

2. Pulls:
   a. Pulls shall be aluminum wire pulls, 4" brushed finish. Pulls for doors and drawers using through panel fasteners shall be applied with standard 8 x 32 machine screws.

3. Catches:
   a. Door catches shall be magnetic holders.

4. Drawer Slides:
   a. Drawers shall be mounted on steel slides with a white baked epoxy finish. Slides shall be static rated at 75 pounds (at full extension, ANSI/BHMA testing). They shall have self-closing slides, fitted with Silent Glide nylon rollers and shall offer a 95% exposure on a fully opened drawer in a standard size cabinet.

5. Adjustable casework shelf supports shall be pin-type, polished brass, to fit 5mm hole.

T. Counter Top Supports:
   1. Iron Shore Knee Saver Support, 1 ½” x 1 ½” steel tube.

U. Interior Panel Reveal Trim:
   1. Equivalent to Flannery, Inc. Model Number WPR 75-375-50 in standard clear anodized finish.

PART 3 EXECUTION

3.01 PREPARATION
A. Condition woodwork to average prevailing humidity conditions in installation areas prior to installing.

B. Prior to installation of architectural woodwork, examine shop-fabricated work for completion, and complete work as required, including back priming and removal of packing.

3.02 INSTALLATION
A. Install woodwork plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-O" for plumb and level (including tops); and with no variation in flushness of adjoining surfaces.

B. Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.
C. Anchor woodwork to anchors or blocking built-in or directly attached to substrates. Secure grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fastener heads are required, use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork, and matching final finish where transparent finish is indicated.

D. Cabinets: Install without distortion so that doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings to provide unencumbered operation. Complete the installation of hardware and accessory items as indicated. Maintain veneer sequence matching (if any) of cabinets with transparent finish.

E. Tops: Anchor securely to base units and other support systems as indicated.

F. Wall mounted shelf standards to anchor to blocking built-in or directly attached to substrate.

3.03 ADJUSTMENT, CLEANING, FINISHING AND PROTECTION

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

B. Clean, lubricate and adjust hardware.

C. Clean woodwork on exposed and semi-exposed surfaces. Touch-up shop-applied finishes to restore damaged or soiled areas.

D. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing of concealed surfaces and similar preparations for finishing of architectural woodwork, as applicable to each unit of work.

E. Refer to Division-9 sections for finishing of installed architectural woodwork.

F. Provide final protection and maintain conditions, in a manner acceptable to Fabricator and Installer, which ensures architectural woodwork being without damage or deterioration at time of Substantial Completion.

END OF SECTION
PART 1  GENERAL

1.01 SECTION INCLUDES
   A. Countertops for architectural cabinetwork.
   B. Windowsills.
   C. Wall-hung countertops and vanity tops.

1.02 REFERENCE STANDARDS
   C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.
   D. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position; 2014.
   G. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.
   K. ISFA 3-01 - Classification and Standards for Quartz Surfacing Material; 2013.
   M. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
   N. PS 1 - Structural Plywood; 2009.
   O. WI (CCP) - Certified Compliance Program (CCP); current edition at www.woodworkinstitute.com/certification.
   P. WI (MCP) - Monitored Compliance Program (MCP); current edition at www.woodworkinstitute.com/certification.

1.03 SUBMITTALS
   A. See Section 013000 - Administrative Requirements, for submittal procedures.
   B. Product Data: Manufacturer's data sheets on each product to be used, including:
      1. Preparation instructions and recommendations.
      2. Storage and handling requirements and recommendations.
      3. Specimen warranty.
   C. Shop Drawings: Complete details of materials and installation; combine with shop drawings of cabinets and casework specified in other sections. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, waste receptacles, and other items installed in solid surface.
D. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.
E. Test Reports: Chemical resistance testing, showing compliance with specified requirements.
F. Installation Instructions: Manufacturer's installation instructions and recommendations.
G. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.04 QUALITY ASSURANCE
A. Fabricator Qualifications: Same fabricator as for cabinets on which tops are to be installed.
B. Installer Qualifications: Fabricator.

1.05 DELIVERY, STORAGE, AND HANDLING
A. Do not deliver components to project site until areas are ready for installation.
B. Store products in manufacturer's unopened packaging until ready for installation.
C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.06 FIELD 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.

1.07 WARRANTY
A. Provide manufacturer's 10 year warranty against defects in solid surface materials.
   1. Warranty shall provide material to repair or replace defective materials.

PART 2 PRODUCTS
2.01 SOLID POLYMER FABRICATIONS
A. Acceptable products: Solid Surfacing from DuPont Corian or approved equivalent.
   1. Material shall have minimum physical and performance properties specified.
   2. Superficial damage to a depth of 0.10" (25 mm) shall be repairable by sanding or polishing.
C. Countertops: ¾” thick solid polymer adhesively joined with no exposed seams, having edge details as indicated on the Drawings. Color to be Silver Birch.
D. Window Sills: ½” thick solid polymer adhesively joined with no exposed seams, having edge details as indicated on the Drawings. Color to be Silver Birch.
E. Door Thresholds/Saddles at Porcelain Floor Tile Transitions to be ½” thick solid polymer adhesively joined with no exposed seams having edge details and size as indicated on the drawings. Color to be Deep Cloud.

2.02 ACCESSORY MATERIALS
A. Wood-Based Components:
   1. Wood fabricated from old growth timber is not permitted.
B. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch thick; join lengths using metal splines.
C. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
   1. Provide color matched seams.

D. Sealant: Manufacturer's standard mildew-resistant, FDA-compliant silicone sealant in colors matching components.

2.03 FABRICATION

A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
   1. Join lengths of tops using best method recommended by manufacturer.
   2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
   3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

B. Rout and finish component edges with clean, sharp returns.
   1. Rout cutout, radii and contours to template.
   2. Smooth edges.

C. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
   1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
   2. Height: 4 inches, unless otherwise indicated.

D. Fabricate tops up to 144 inches long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.

E. Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings.

PART 3 EXECUTION

3.01 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.

C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 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.

3.03 INSTALLATION

A. Install components plumb and level, in accordance approved shop drawings and project installation details.
   1. Provide products in largest pieces available.

B. Securely attach countertops to cabinets using manufacturer's recommended adhesive.

C. Provide backsplashes and endsplashes as indicated on drawings.
   1. Adhere to countertops using manufacturer's color-matched silicone sealant.
   2. Form field joints using manufacturer’s recommended adhesive, with joints inconspicuous in finished work.
3. Exposed joint/seams shall not be allowed.
4. Align adjacent countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop.

D. Install applied backsplashes and sidesplashes using manufacturer's standard color-matched silicone sealant. Adhere applied backsplashes and sidesplashes to countertops using manufacturer's standard color-matched silicone sealant.

E. Seal joint between back/end splashes and vertical surfaces.

F. Sinks: Secure sinks to tops using manufacturer's recommended sealant and adhesive. See plumbing drawings.

3.04 TOLERANCES

A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
C. Field Joints: 1/8 inch wide, maximum.

3.05 CLEANING

A. Clean countertops surfaces thoroughly.
B. Remove adhesives, sealants and other stains.

3.06 PROTECTION

A. Protect installed products until completion of project.
B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION
PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnishing of and paying for all labor, materials, services, equipment and appliances necessary for the execution, installation and completion of all work specified herein and as shown on drawings.

B. Section includes:
   1. Batt Insulation in existing exterior wall construction.
   2. Sound Attenuation Batt Insulation in interior wall construction.
   3. Sound Attenuation Fire Blankets
   4. Fire Safing Insulation
   5. All Accessories as required for installation of insulation

1.02 REFERENCES


1.03 PERFORMANCE REQUIREMENTS

A. Materials of this section shall provide continuity of thermal barrier at building enclosure elements.

1.04 SUBMITTALS

A. Submit under provisions of Section 013000.

B. Product Data: Provide data on insulation materials describing insulation properties.

1.05 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 017200.

B. Submittals

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 016000.

B. Store material off ground, under cover and away from damp surfaces and keep material dry at all times.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Certainteed Corporation

B. Owens-Corning Fiberglas Corporation

C. Johns Manville

D. Thermafiber, Inc.

E. Substitution: Under provisions of Section 01 6000.

2.02 EXTERIOR WALL BATT INSULATION

A. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit. (Typical at all exterior wall locations)
   2. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
   3. Smoke Developed Index: 50 or less, when tested in accordance with ASTM E84.
   4. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
   5. Formaldehyde Content: Zero.
   7. Thickness: 3.5 inches
2.03 SOUND ATTENUATION BATT INSULATION

**A. Glass Fiber Batt Insulation:** Flexible preformed batt or blanket, complying with ASTM C665; friction fit. (Typical at all interior wall locations)
1. **Basis of Design:** CertainTeed “Noise Reducer” Sound Attenuation Batts.
2. **Flame Spread Index:** 75 or less, when tested in accordance with ASTM E84.
3. **Smoke Developed Index:** 450 or less, when tested in accordance with ASTM E84.
4. **Combustibility:** Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
5. **Formaldehyde Content:** Zero.
6. **Thermal Resistance:** R-value of 12.
7. **Thickness:** 3.5 inches

2.04 SOUND ATTENUATION FIRE BLANKETS

**A. Mineral Wool Batt Insulation (At fire rated interior wall locations)**
1. **Basis of Design:** Thermafiber Sound Attenuation Fire Blanket (SAFB)
2. **Facing:** Unfaced only.
3. **Density:** 4.0 pcf (nominal) for 1” thick material.
4. **Density:** 2.5 pcf (nominal) for thicknesses greater than 1”.
5. **Surface Burning Characteristics:** Unfaced-Flame Spread 0 and Smoke Developed 0.
6. **Minimum Recycle Content:** 70% (Pre-Consumer).
7. **Thickness:** 3.5 inches

2.05 FIRE SAFING INSULATION

**A. Mineral Wool Batt Insulation (At fire rated penetrations)**
1. **Basis of Design:** Thermafiber Safing
2. **Thickness:** As noted in tested designs.
3. **Facing:** Unfaced.
4. **Standard Density:** 4.0 pcf (actual).
5. **Surface Burning Characteristics:** Unfaced-Flame Spread 0 and Smoke Developed 0.
6. **Recycled Content Options:**
   a. **Pre-consumer recycled content:**
      Special “Green” Fiber .............................................. 90%
      Dark Fiber Mineral Wool Products ............................ 84%
      EPA Choice Fiber (US Government Buildings) ....... 75%
      Standard Mineral Wool Products ............................. 70%
   b. **Post-consumer recycled content**........................ 0%

2.06 ACCESSORIES

**A.** Adhesives, insulation fasteners, tape, etc. as required and recommended by insulation manufacturers.

PART 3 EXECUTION

3.01 EXAMINATION

**A.** Verify site conditions under provisions of Section 013900.

**B.** Verify that substrate, adjacent materials, and insulation are dry and ready to receive insulation.
3.02 INSTALLATION

A. Install insulation in accordance with insulation manufacturer's instructions.

B. Install in exterior and interior walls without gaps or voids. Do not compress insulation.

C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tight in spaces and tight to exterior side of mechanical and electrical services within the plane of insulation. Leave no gaps or voids.

E. Between Metal Studs:
   1. Friction-fit insulation between studs after cover material has been installed on one side of the cavity.
   2. Use wire or metal straps to hold in place without a cover material or where the stud depth is larger than the insulation thickness.
   3. When faced insulation is used, the attachment flanges shall be taped to the face of the metal stud prior to applying the interior finish.
   4. Provide supplementary support to hold the product in place until finish surface is applied when insulation is installed in heights over 8 feet.

F. Between Furring Strips:
   1. Install insulation between furring strips, hat channels or Z-shaped furring in areas where finish surface will be applied.
   2. Contact the furring manufacturer for recommendations on the appropriate fastener system to use.

G. Tape seal butt ends, lapped flanges, and tears or cuts.

3.03 PROTECTION OF FINISH WORK

A. Protect finish work under provision of Section 015000.

B. Do not permit work to be damaged prior to covering insulation.

END OF SECTION
PART 1 GENERAL

1.01 SECTION INCLUDES

A. Patching of existing fireproofing on interior structural steel.

B. Spray-On Fireproofing Allowance (Refer to Section 01 2100)
   1. The Contractor shall include in his Base Bid an amount of $25,000.00. This allowance shall cover the cost of any spray-on fireproofing repair work including all costs for labor, tools, equipment, overhead, and profit. The Contractor shall provide Unit Pricing for this work as indicated on the Bid Form, Section 00 4100 and as required per Project Specifications, Section 01 2100, Para. 1.04.

1.02 REFERENCE STANDARDS


1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with placement of ceiling hanger tabs, mechanical component hangers, and electrical components.

B. Preinstallation Meeting: Convene one week before starting work of this section.

C. Sprayed-On Fireproofing System: Protect the primary and secondary structural steel members with specified materials to thicknesses and densities required to provide the fire resistance ratings noted on the Drawings when tested in accordance with ASTM E119.
1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittals procedures.

B. Product Data: Provide data indicating product characteristics, performance criteria, and limitations of use.

C. Application Schedule:
   1. Submit a schedule of member sizes and thickness of field-applied cementitious material, tabulated for each member size, including underside of metal floor and roof deck.

D. Test Reports: Reports from reputable independent testing agencies for proposed products, indicating compliance with specified criteria, conducted under conditions similar to those on project, for:
   1. Bond Strength of Fireproofing: ASTM E72, tested to provide minimum bond strength twenty times weight of fireproofing materials
   2. Bond Impact.
   3. Density.
   4. Fire tests using substrate materials similar to those in project conditions.

E. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

F. Manufacturer's Certificate: Certify that sprayed-on fireproofing products meet or exceed requirements of contract documents. Coordinate with existing structural steel and deck finishes. Verify adhesive properties of product with galvanized substrate finish. Certify that product adhesion is compatible with specified substrate finish.

G. Manufacturer's Field Reports: Indicate environmental conditions under which fireproofing materials were installed.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified in this section, and:
   1. Having minimum five years of documented experience.
   2. Approved by manufacturer.

C. Certificates:
   1. Manufacturer's certification that materials meet or exceed specification requirements.
   2. Applicator's certification that application has been completed as specified to meet fire resistance ratings and thickness requirements.

D. Asbestos Content:
   1. No detectable asbestos fibers are permitted per method specified in 40 CFR Part 763, Subject F, Appendix A, Section 1, Polarized Light Microscopy.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the job in manufacturer's original unopened expiration dated containers with the manufacturer's name, brand grade, UL listing and other pertinent information clearly marked thereon. Do not use fireproofing material that has passed expiration dated noted on the container.

B. Deliver and store materials in a manner to prevent damage, including exposure to water and staining.

1.07 MOCK-UP

A. Construct mock-up on a section 6 feet long on a typical beam, column and underside of metal
deck surfaces, as selected by the Architect, in accordance with application and coverage requirements. Sample shall be for Architect's approval, as a guide to the finished Work.

B. Provide mockup of sprayed-on fireproofing under provisions of Section 01 4000.

C. Conform to project requirements for fire ratings, thickness, and density of application.

D. Locate where directed.

E. Examine installation within one hour of application to determine variances from specified requirements due to shrinkage, temperature, and humidity.

F. Where shrinkage and cracking are evident, adjust mixture and method of application as necessary. Remove materials and re-construct mock-up.

G. Mock-up may remain as part of the Work if accepted by the Architect.

H. Sequence work in conjunction with placement of ceiling hanger tabs, mechanical component hangers, and electrical components and any other items suspended from floor or roof structure.

1.08 FIELD CONDITIONS

A. Do not apply spray fireproofing when temperature of substrate material and surrounding air is below 40 degrees F.

B. Provide ventilation in areas to receive fireproofing during application and 24 hours afterward, to dry applied material.

C. Provide temporary enclosure to prevent spray from contaminating air.

D. Protect from environmental conditions per manufacturer's written requirements.

1.09 WARRANTY

A. See Section 01 7250 - Closeout Submittals, for additional warranty requirements.

B. Submit a written warranty, executed by Contractor and co-signed by Installer, agreeing to repair or replace sprayed-on fireproofing that has failed within the specified warranty period.

C. Correct defective Work within a two year period after Date of Substantial Completion.
   1. Include coverage for fireproofing to remain free from cracking, checking, dusting, flaking, spalling, separation, and blistering.
   2. Reinstall or repair failures that occur within warranty period.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Sprayed-On Fireproofing:
   1. Isolatek International, Inc.; Product Cafco Fiber-Patch.
   2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FIREPROOFING ASSEMBLIES

A. Provide fire-rated assembly ratings to UL Design Nos. as follows:
   1. Interior columns: 2 hours; UL No. X829 (Existing Thickness = 1 7/8”).
   2. Interior beams: 2 hours; UL No. D902 (Existing Thickness = 1/2”).
   3. Exterior columns: 2 hours; UL No. X829 (Existing Thickness = 1 7/8”).

2.03 MATERIALS

A. Sprayed Fire-Resistive Material for Interior Applications: Manufacturer's standard factory mixed material, which when combined with water is capable of providing the indicated fire
resistance, and conforming to the following requirements:

1. **Bond Strength:** 150 psf, minimum, when tested in accordance with ASTM E736 when set and dry.
2. **Dry Density:** 21 lb/cu ft, minimum, when tested in accordance with ASTM E605.
3. **Effect of Impact on Bonding:** No cracking, spalling or delamination, when tested in accordance with ASTM E760.
4. **Thickness:** As required for fire-resistance design indicated, measured according to the requirements of fire-resistance design.
5. **Corrosivity:** No evidence of corrosion, when tested in accordance with ASTM E937.
6. **Air Erosion Resistance:** Weight loss of 0.025 g/sq ft, maximum, when tested in accordance with ASTM E859 after 24 hours.
7. **Surface Burning Characteristics:** Maximum flame spread of 0 and maximum smoke developed of 0, when tested in accordance with ASTM E84.
8. **Combustion Characteristics:** When tested in accordance with ASTM E136 shall be noncombustible.
9. **Effect of Deflection:** No cracking, spalling, or delamination, when tested in accordance with ASTM E759.
10. **Compressive Strength:** When tested in accordance with ASTM E761, the material shall not deform more than 10 percent when subjected to a crushing force of 1,440 psf.
11. **Resistance to Mold:** The fireproofing material shall be formulated at the time of manufacturing with a mold inhibitor. Fireproofing material shall be tested in accordance with ASTM G 21 and shall show resistance to mold growth for a period of 28 days for general use.
12. **Fire Resistance Classification:** The spray applied fireproofing material shall have been tested and reported by Underwriters Laboratories Inc. in accordance with the procedures of ASTM E119 and shall be listed in the Underwriters Laboratories Fire Resistance Directory.
13. **Mixing water shall be clean, fresh and suitable for domestic consumption and free from such amounts of mineral or organic substances as would affect the set of the fireproofing material. Provide water with sufficient pressure and volume to meet fireproofing application schedule.**

### 2.04 AUXILIARY MATERIALS

**A. General:** Provide auxiliary materials that are compatible with fireproofing and substrates and are approved by UL or another testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistance designs indicated.

**B. Substrate Primers:** Primers approved by fireproofing manufacturer and complying with one or both of the following requirements:

1. Fireproofing manufacturer shall be contacted for procedures on handling primed/painted steel.
2. Primer’s bond strength in required fire-resistance design complies with specified bond strength for fireproofing and with requirements in UL’s “Fire Resistance Directory” or in the listings of another qualified testing agency acceptable to authorities having jurisdiction, based on a series of bond tests according to ASTM E 736.

**C. Bonding Agent:** Product approved by fireproofing manufacturer and complying with requirements in UL’s “Fire Resistance Directory” or in the listings of another qualifies testing agency acceptable to authorities having jurisdiction.

**D. Metal Lath:** Expanded metal lath fabricated from material of weight, configuration, and finish required, according to fire-resistance designs indicated and fireproofing manufacturer’s written recommendations. Include clips, lathing accessories, corner beads, and other anchorage devices required to attach lath to substrates and to receive fireproofing.

**E. Reinforcing Fabric:** Glass or carbon fiber fabric of type, weight, and form required to comply with fire-resistance designs indicated; approved and provided by fireproofing manufacturer.

**F. Reinforcing Mesh:** Metallic mesh reinforcement of type, weight, and form required to comply
with fire-resistance design indicated; approved and provided by fireproofing manufacturer. Include pins and attachment.

G. Sealer: If required, a transparent-drying, water-dispersible, tinted protective coating as recommended by fireproofing manufacturer.
   1. Product: Subject to compliance with requirements, provide CAFCO® BOND-SEAL or CAFO® BOND-SEAL Type X® by Isolatek International.

H. Topcoat: If required, a topcoat suitable for application over applied fireproofing; of type recommended by fireproofing manufacturer.
   1. Cement-Based Topcoat: Factory-mixed, cementitious hard-coat formulation for trowel or spray application over SFRM.
      a. Product: Subject to compliance with requirements, provide CAFCO® FENDOLITE® M-II/CAFCO® FENDOLITE® TG by Isolatek International.
   2. Water-Based Permeable Topcoat: Factory-mixed formulation for brush, roller, or spray application over applied SFRM. Provide application at a rate of [30 sq. ft./gal. (0.75 sq. m/L)] [60 sq. ft./gal. (1.5 sq. m/L)] [120 sq. ft./gal. (3 sq. m/L)].
      a. Product: Subject to compliance with requirements, provide CAFO® TOP-COTE by Isolatek International.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces to receive fireproofing are free of oil, grease, paint/primers, loose mill scale, dirt or other foreign substances which may impair proper adhesion of the fireproofing to the substrate.

B. Verify that primed steel is compatible with fireproofing adhesive.

C. Verify that clips, hangers, supports, sleeves, and other items required to penetrate fireproofing are in place.

D. Verify that ducts, piping, equipment or other items that would interfere with application of fireproofing have not been installed until fireproofing work is complete.

E. Verify that voids and cracks in substrate have been filled. Verify that projections have been removed where fireproofing will be exposed to view as a finish material.

F. For substrates suspected of being coated with oil, rolling compounds or other substances not readily identifiable but potentially capable of impairing bond, conduct tests recommended by fireproofing manufacturer to determine their presence and effect on abrasion or fireproofing.

G. Application of the fireproofing shall not begin until the contractor, applicator and fireproofing testing laboratory (inspector) have examined surfaces to receive fireproofing and determined that the surfaces are acceptable to receive fireproofing material.

3.02 PREPARATION

A. Perform tests as recommended by fireproofing manufacturer in situations where adhesion of fireproofing to substrate is in question.

B. Remove incompatible materials that could affect bond by scraping, brushing, scrubbing, or sandblasting.

C. Complete placing of concrete on floor(s) prior to application of the fireproofing to the underside of steel deck and supporting beams and joists.

D. Prepare substrates to receive fireproofing in strict accordance with instructions of fireproofing manufacturer.
E. If steel is primed/painted conform to the fireproofing manufacturer’s application instructions.
F. Apply fireproofing manufacturer’s recommended bonding agent on primed steel.
G. Protect surfaces not scheduled for fireproofing and equipment from damage by overspray, fall-out, and dusting.
H. Close off and seal duct work in areas where fireproofing is being applied.

3.03 APPLICATION
A. Equipment and application procedures shall conform to the material manufacturer’s application instructions.
B. Post appropriate “Slippery When Wet” signs in all areas in contact with wet fireproofing material. Erect appropriate barriers to prevent entry by non-fireproofing workers in the fireproofing spray and mixing areas and other exposed to wet fireproofing material.
C. Install metal lath over structural members as indicated on drawings and shop drawings and as required in applicable UL Assembly or as required by UL Assembly Design Numbers.
D. Apply fireproofing in accordance with manufacturer’s instructions.
E. Apply fireproofing in thickness and density necessary to achieve required ratings, with uniform density and texture.
F. Install metal lath, when required by manufacturer for proper support of fireproofing material.

3.04 FIELD QUALITY CONTROL
A. Field inspection and testing will be performed under provisions of Section 014000.
B. Test the thickness and density in accordance with ASTM E605. Areas showing thickness less than that required as a result of fire endurance test will be rejected.
C. Inspect the installed fireproofing after application and curing for integrity, prior to its concealment. Ensure that actual thicknesses, densities, and bond strengths meet requirements for specified ratings and requirements of the Authority Having Jurisdiction.
D. Re-inspect the installed fireproofing for integrity of fire protection, after installation of subsequent Work.

3.05 CLEANING
A. Remove excess material, overspray, droppings, and debris.
B. Remove fireproofing from materials and surfaces not required to be fireproofed.
C. At exposed fireproofing, clean surfaces that have become soiled or stained, using manufacturer’s recommended procedures.

3.06 PATCHING AND REPAIRING
A. All patching and repairing of spray applied fireproofing shall be performed with same materials under this section.
B. Inspect after mechanical, electrical and other trades have completed work in contact with fireproofing material, but before sprayed material is covered by subsequent construction.
C. Perform corrective measures in accordance with fireproofing material manufacturer’s recommendations:
   1. Respray areas requiring additional fireproofing material to provide the required thickness, and replace dislodged or removed material.
   2. Spray material for patching by machine directly on point to be patched or into a container and then hand apply.
3. Hand mixing of materials is not permitted.

D. Repair:
   1. Respray all test and rejected areas
   2. Patch fireproofing material which is removed or disturbed after approval.

E. Perform final inspection of sprayed areas after patching and repair.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Section, apply to work specified in this section.

1.02 DEFINITIONS

A. Firestopping: Material or combination of materials used to retain integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke, and hot gases through penetrations in fire rated wall and floor assemblies.

1.03 GENERAL DESCRIPTION OF THE WORK OF THIS SECTION

Only tested firestop systems shall be used in specific locations as follows:

A. Penetrations for the passage of duct, cable, cable tray, conduit, piping, electrical busways and raceways through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.

B. Safing slot gaps between edge of floor slabs and curtain walls.

C. Openings between structurally separate sections of wall or floors.

D. Gaps between the top of walls and ceilings or roof assemblies.

E. Expansion joints in walls and floors.

F. Openings and penetrations in fire-rated partitions or walls containing fire doors.

G. Openings around structural members which penetrate floors or walls.

1.04 RELATED WORK OF OTHER SECTIONS

A. Coordinate work of this section with work of other sections as required to properly execute the work and as necessary to maintain satisfactory progress of the work of other sections.

1.05 REFERENCES


B. Underwriters Laboratories (UL) of Northbrook, IL runs ASTM E-814 under their designation of UL 1479 and publishes the results in their "FIRE RESISTANCE DIRECTORY" that is updated annually with a midyear supplement.
   1. UL Fire Resistance Directory:
      a. Firestop Devices (XHJI)
      b. Fire Resistance Ratings (BXUV)
      c. Through-Penetration Firestop Systems (XHEZ)
      d. Fill, Voids, or Cavity Material (XHHW)
      e. Forming Materials (XHKU)

E. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestops; 2014.
J. ITS (DIR) - Directory of Listed Products; current edition.
L. FA (AG) - FM Approval Guide; Factory Mutual Research Corporation; current edition.
M. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition.
O. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.
P. International Building Codes
R. NFPA 70 - National Electric Code

1.06 QUALITY ASSURANCE

A. A manufacturer's direct representative (not distributor or agent) to be on-site during initial installation of firestop systems to train appropriate contractor personnel in proper selection and installation procedures. This will be done per manufacturer's written recommendations published in their literature and drawing details.

B. Firestop System installation must meet requirements of ASTM E-814, UL 1479 or UL 2079 tested assemblies that provide a fire rating equal to that of construction being penetrated.

C. Proposed firestop materials and methods shall conform to applicable governing codes having local jurisdiction.

D. Firestop Systems do not reestablish the structural integrity of load bearing partitions/assemblies, or support live loads and traffic. Installer shall consult the structural engineer prior to penetrating any load bearing assembly.

E. For those firestop applications that exist for which no UL tested system is available through any manufacturer, a manufacturer's engineering judgment derived from similar UL system designs or other tests will be submitted to local authorities having jurisdiction for their review and approval.
prior to installation. Engineer judgment drawings must follow requirements set forth by the International Firestop Council (latest edition).

1.07 SUBMITTALS

A. Submit Product Data: Manufacturer's specifications and technical data for each material including the composition and limitations, documentation of UL firestop systems to be used and manufacturer's installation instructions to comply with Section 013000.

B. Manufacturer's engineering judgment identification number and drawing details when no UL system is available for an application. Engineer judgment must include both project name and contractor's name who will install firestop system as described in drawing.

C. Submit material safety data sheets provided with product delivered to job-site.

1.08 INSTALLER QUALIFICATIONS

A. Engage an experienced Installer who is certified, licensed, or otherwise qualified by the firestopping manufacture as having been provided the necessary training to install manufacture's products per specified requirements. A manufacture's willingness to sell its firestopping products to the Contractor or to an Installer engaged by the Contractor does not in itself confer qualification on the buyer.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials undamaged in manufacturer's clearly labeled, unopened containers, identified with brand, type, and UL label where applicable.

B. Coordinate delivery of materials with scheduled installation date to allow minimum storage time at job-site.

C. Store materials under cover and protect from weather and damage in compliance with manufacturer's requirements.

D. Comply with recommended procedures, precautions or remedies described in material safety data sheets as applicable.

E. Do not use damaged or expired materials.

1.10 PROJECT CONDITIONS

A. Do not use materials that contain flammable solvents.

B. Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.

C. Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding.

D. Weather conditions: Do not proceed with installation of firestop materials when temperatures exceed the manufacturer's recommended limitations for installation printed on product label and product data sheet.

E. During installation, provide masking and drop cloths to prevent firestopping materials from contaminating any adjacent surfaces.
PART 2 - PRODUCTS

2.01 FIRESTOPPING, GENERAL

A. Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacture based on testing and field experience.

B. Provide components for each firestopping system that are needed to install fill material. Use only components specified by the firestopping manufacture and approved by the qualified testing agency for the designated fire-resistance-rated systems.

C. Firestopping Materials are either “cast-in-place” (integral with concrete placement) or “post installed.” Provide cast-in-place firestop devices prior to concrete placement.

2.02 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with through penetration firestop systems (XHEZ) listed in Volume II of the UL Fire Resistance Directory, provide products of the following manufacturers as identified below:

1. Hilti, Inc., Tulsa, Oklahoma  
   (800) 879-8000
2. Tremco Sealants & Coatings, Beachwood, Ohio  
   (216) 292-5000
3. 3M Fire Protection Products, St. Paul, Minnesota  
   (612) 736-0203

Provide products from one of the three acceptable manufacturers; no substitutions will be accepted.

2.03 MATERIALS

A. Use only firestop products that have been UL 1479, ASTM E-814, or UL 2079 tested for specific fire-rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire-rating involved for each separate instance.

B. Cast-in place firestop devices for use with non-combustible and combustible plastic pipe (closed and open piping systems) penetrating concrete floors, the following products are acceptable:

1. Hilti CP 680 Cast-In Place Firestop Device

C. For penetrations by non-combustible items including steel pipe, copper pipe, rigid steel conduit and electrical metallic tubing (EMT), the following materials are acceptable:

1. Hilti FS 601 Elastomeric Firestop Sealant
2. Hilti FS-ONE High Performance Intumescent Firestop Sealant
3. Hilti CP 620 FireFoam
4. 3M Fire Stop Sealant 2000
5. 3M Fire Barrier CP25 WB
6. Tremco Tremstop Fyre-Sil Sealant

D. For fire-rated construction joints and other gaps, the following materials are acceptable:

1. Hilti FS 601 Elastomeric Firestop Sealant
2. Hilti CP 601s Elastomeric Firestop Sealant
3. Hilti CP 606 Flexible Firestop Sealant
4. Hilti CP 672 Firestop Joint Spray
5. Hilti CP 604 Self-leveling Firestop Sealant
6. 3M Firestop Sealant 2000
7. Tremco Tremstop Fyre-Sil Sealant

E. For penetrations by combustible items (penetrants consumed by high heat and flame) including insulated metal pipe, PVC jacketed, flexible cable or cable bundles and plastic pipe (closed piping systems), the following materials are acceptable:
   1. Hilti FS-ONE High Performance Intumescent Firestop Sealant
   2. Hilti CP 618 Firestop Putty
   3. Hilti CP 642 Firestop Jacket
   4. Hilti CP 643 Firestop Jacket
   5. 3M Fire Barrier CP25 WB
   6. 3M Fire Barrier FS-195 Wrap/Strip
   7. Tremco Tremstop WBM Intumescent Firestop Sealant

F. For penetrations by combustible plastic pipe (open piping systems), the following materials are acceptable:
   1. Hilti CP 642 Firestop Jacket
   2. Hilti CP 643 Firestop Jacket
   3. Hilti FS-ONE High Performance Intumescent Firestop Sealant
   4. 3M Fire Barrier PPD Plastic Pipe Device

G. For large size/complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways, the following materials are acceptable:
   1. Hilti FS 635 Trowelable Firestop Compound
   2. Hilti FIRE BLOCK
   3. Hilti CP 620 FireFoam
   4. 3M Firestop Foam 2001
   5. 3M Fire Barrier CS-195 Composite Sheet

H. For openings between structurally separate sections of wall and floors. Top-of-walls, the following materials are acceptable:
   1. Hilti FS 601 Elastomeric Firestop Sealant
   2. Hilti CP 601s Elastomeric Firestop Sealant
   3. Hilti CP 606 Flexible Firestop Sealant
   4. Hilti FS-ONE High Performance Intumescent Firestop Sealant
   5. 3M Fire Barrier CP 25 WB

I. Provide a firestop system with a "F" Rating as determined by UL 1479 or ASTM E814 which is equal to the time rating of construction being penetrated.

J. Provide a firestop system with an Assembly Rating as determined by UL 2079 which is equal to the time rating of construction being penetrated.

PART 3 - EXECUTION

3.01 PREPARATION

A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.
   1. Verify penetrations are properly sized and in suitable condition for application of materials.
   2. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, laitance, release agents, water repellents, and any other substances that may affect proper adhesion.
   3. Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.
   4. Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.
3.02 COORDINATION

A. Coordinate location and proper selection of cast-in-place Firestop Devices with trade responsible for the work. Ensure device is installed before placement of concrete.

B. Responsible trade to provide adequate spacing of field run pipes to allow for installation of cast-in-place firestop devices without interference.

3.03 INSTALLATION


B. Manufacturer's Instructions: Comply with manufacturer's instructions for installation of through-penetration materials.
   1. Seal all holes or voids made by penetrations to ensure an air and water resistant seal.
   2. Consult with mechanical engineer, project manager prior to installation of UL firestop systems that might hamper the performance of fire dampers as it pertains to duct work.
   3. Protect materials from damage on surfaces subjected to traffic.

3.04 FIELD QUALITY CONTROL

A. Examine sealed penetration areas to ensure proper installation before concealing or enclosing areas.

B. Keep areas of work accessible until inspection by applicable code authorities.

C. Perform under this section patching and repairing of firestopping caused by cutting or penetrating of existing firestop systems already installed by other trades.

3.05 ADJUSTING AND CLEANING

A. Remove equipment, materials and debris, leaving area in undamaged, clean condition.

B. Clean all surfaces adjacent to sealed holes and joints to be free of excess firestop materials and soiling as work progresses.
### SCHEDULES OF THROUGH PENETRATION FIRESTOP SYSTEMS

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* No UL-Classified systems for this manufacturer. Engineer Judgement Drawing Required

### NOTES:

1. Jobsite conditions of each through-penetration firestop system must meet ALL details of the UL-Classified System selected.
2. If jobsite conditions do not match any UL-classified systems in the schedules above, contact firestop manufacturer for alternative systems or Engineer Judgement Drawings.
3. Where more than one applicable UL-Classified System is listed in the schedules, choose the UL System which is most economical for each through-penetration firestop system.
4. Coordinate work with other trades to assure that penetration opening sizes are appropriate for penetrant locations, and vice versa.
5. For 3-hour rated gypsum walls, contact the firestop manufacturer for a UL-classified system or engineer judgement drawing.
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* SEE NOTE 6
** CONTACT MANUFACTURER FOR CURRENT UL-CLASSIFIED SYSTEM OR ENGINEER JUDGEMENT DRAWING

### NOTES:
1. For edge of slab joints at unrated curtain walls, utilize Omega Point Laboratories drawing # cej-216p, or contact hilti for an engineer judgement drawing (1-800-879-8000.)
2. Classified systems for 2" - 6" wide joints may be used for joints 2" wide and less.
3. Confirm that movement capabilities of the selected UL system meets or exceeds the specified movement range of the particular joint.
4. Systems marked with asterik (*) are suitable for top-of-wall joints where the fluted metal deck has spray-on monokote mk-6/hy fireproofing.
5. Head-of-wall systems specified only for 2- or 3-hr systems may not be suitable for masonry walls or gypsum wall assemblies with lower hourly ratings. Contact the firestop manufacturer for clarification.

END OF SECTION
PART 1  GENERAL

1.01  SCOPE OF WORK

A. Furnishing of and paying for all labor, services, appliances, materials, and equipment necessary for execution, installation, and completion of all work specified herein and as shown on drawings.

B. Section includes:
   1. Preparing substrate surfaces.
   2. Non-security sealants
   3. Security Type Detention Sealants
      a. Security Detention Type Sealants required of all joints within every Inmate Holding Area.
   4. Sealant required around perimeter of frames and devices at openings in exterior walls, such as door frames, louvers, stationary glass, metal, and frames.
   5. Sealant required around perimeter of frames and devices at interior walls such as door frames, borrowed light frames, glass openings, metal frames, or devices in walls.
   6. Joints between abutting parts of dissimilar exterior materials such as concrete block/concrete, steel angles concrete, including any other joints normally sealed of dissimilar materials.
   7. Isolation, relief or expansion joints, interior or exterior, in same material or between dissimilar materials, including relief or construction joints in concrete floors, concrete block, brick, and gypsum partitions.
   8. Metal flashing, and wall caps into reglets.
   9. Sealant required around perimeter of plumbing fixtures, solid surfacing tops, millwork countertops and other sanitary locations.
  10. Isolation, relief or expansion joints, between new/new construction.
  11. Joint packing, primer and other items necessary or incidental to completion of this work.
  12. Sealants at top of masonry walls to deck above.
  14. Removal and complete replacement of existing sealants disturbed by construction of new work.
  15. Other points and/or joints normally sealed unless specified elsewhere.

1.02  REFERENCES


1.03 SUBMITTALS

A. Submit under provisions of Section 013000.

B. Product Data: Indicate sealant chemical characteristics, performance criteria, limitations, and color availability.

C. Samples: Submit three (3) samples illustrating sealant for colors selected.

D. Manufacturer’s Installation Instructions: Indicate special procedures, surface preparation, perimeter conditions requiring special attention.

E. Applicator/Manufacturer Certification: Submit as per Article 1.06.

F. Applicator Certification: Submit as per Article 1.07.

G. Manufacturer’s certification that products meet or exceed specified requirements.

1.04 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 017200.

B. Submittals

C. Manufacturer’s Field Report (Para. 3.01A)

1.05 PROJECT WARRANTIES, OPERATION AND MAINTENANCE DATA

A. Submit under provisions of Section 017250.

B. Warranty (Article 1.12)

1.06 QUALITY ASSURANCE

A. Perform work in accordance with sealant manufacturer’s requirements for preparation of surfaces and materials installation instructions.

B. Applicator/Manufacturer Certification: Submit written certification from the Applicator and his Material Manufacturer (that he proposes to utilize) that they have jointly reviewed and agree with
the entire Contract Documents relative to the sealant materials and the application of same as specified herein or shown on the drawings.

C. Certification must be furnished with Submittals (Article 1.03).

1.07 QUALIFICATIONS

A. Applicator: Company specializing in performing the work of this section with a minimum of five years documented experience and certified approved applicator by the manufacturer.

B. Architect may request the applicator to provide a list of complete projects similar to the work of the Section.

C. Certification must be furnished with Submittals (Article 1.03).

1.08 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 016000.

B. Store material to protect against weather damage, direct sunlight, at temperature range of 40 degrees F to 90 degrees F.

1.09 ENVIRONMENTAL CONDITIONS

A. Sealant shall not be applied below 40 degrees F; surfaces to receive sealant must be clean, dry and frost free.

B. Surfaces to receive sealant must be structurally sound, free of dirt, loose particles, oil, grease, asphalt, tar, paint, wax, rust, release agents and curing compounds.

C. Do not apply during inclement weather.

1.10 MOCKUP

A. Provide samples under provisions of Section 014000.

B. Construct mockup with specified sealant types and with the components noted.

C. Locate where directed.

D. Mockup may remain as part of work.

1.11 COORDINATION

A. Coordinate work under provisions of Section 013900.

B. Coordinate the work of the Section with all Sections referencing this Section.

1.12 WARRANTY

A. Provide Warranty that this work will remain water and weathertight for five (5) years from date of Certificate of Substantial Completion.
B. If failure occurs within this period for reason other than that of structural failure, this contractor must immediately repair and/or replace as required to return to acceptance integrity.

PART 2 - PRODUCTS

2.01 SEALANTS (Non-Security Interior Sealants)

A. Manufacturer: Mameco International, Inc.

B. Exterior: One-part moisture curing, gun grade, polyurethane sealant conforming to ASTM C290, Type S, Grade NS, Class 25, Vulkem 116 in manufacturer’s standard colors.

C. Interior: Two-part chemically curing, gun grade, polyurethane sealant conforming to ASTM C290, Type M, Grade NS, Class 25, Vulkem 922, with special mixed colors.

D. Other acceptable manufacturers offering equivalent products:
   1. ChemRex, Inc., Sonneborn Building Products
   2. Exterior: Sonolastic NP2, two-part polyurethane
   3. Interior: Sonolastic NP1, one-part polyurethane

E. Substitution: Under provisions of Section 016000.

2.02 SEALANTS (At Plumbing Fixtures)

A. Manufacturer: General Electric Co., Silicone Products Division.

B. One-part moisture curing, gun grade, fungus resistant, silicone sealant conforming to ASTM C290, Type S, Grade NS, Class 25, in manufacturer’s standard colors.

C. Substitution: Under provisions of Section 016000.

2.03 SECURITY JOINT SEALANTS

A. Pick-Proof Security Sealant: Two-part, rigid, high-solids, high-modulus epoxy resin compound complying with ASTM Specification C-881. Type I and III, Grade 3, Classes B & C.

B. Products: Subject to compliance with requirements, provide one of the following:
   1. Pick-Proof Security Sealant:
      b. “Sikadur 23 Lo-Mod Gel,” Sika Corporation
      d. “Ultrabond FE2315,” Adhesives Technology Corporation

2.04 COLOR SELECTION

A. Exterior Sealant: Shall match color of adjacent material. Sealant will be selected from manufacturer's standard color.

B. Interior Sealant:
   1. Shall match color to adjacent wall and plastic laminate using special mixed color sealant.
   2. Where adjacent materials on each side of the joint are of different colors, the sealant color shall be as directed by the Architect.

C. Security Sealant: Manufacturer’s standard colors.
D. Sealant at Plumbing Fixtures: Shall match color of plumbing fixtures or be clear.

E. The Architect will make final selection of and approve all sealant colors.

2.05 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Equal to Sonofoam soft backer-rod constructed of extruded polyethylene foam or Sonofoam Closed Cell (CC) backer-rod constructed of extruded closed cell polyethylene foam compatible with all products specified herein. Use in proper size for condition.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 - EXECUTION

3.01 MANUFACTURER’S FIELD SERVICE AND REPORTS

A. Manufacturer’s Responsibility
   1. The Manufacturer’s “Technical” Representative is to provide an “on site” job inspection of the project prior to the start of this work, to ensure that any physical conditions which would result in defective work are properly corrected before his materials are applied. The Manufacturer and Subcontractor will ensure that properly instructed personnel are available to do the work and the proper procedures are being followed. Such inspection shall be reported, in writing, to the Architect before proceeding with the work.
   2. This Contractor shall notify the Manufacturer and Architect at least 72 hours prior to the time inspection is required.
   3. Failure or refusal of the manufacturer to provide the inspection and supervision as required by the Article or certification as required by this Specification shall constitute grounds for non-acceptability of materials manufactured by him even though such manufacturers have been specified and approved.
   4. Beginning of installation means installer accepts existing substrate.

3.02 PREPARATION

A. Joint preparation, including cleaning and priming, shall be performed in accordance with the manufacturer’s written instructions. When solvents are used, the applicator shall exercise special care to wipe the dissolved contaminant and solvent from the surface. Sealant will not be allowed to remain on exposed surfaces.

B. Remove loose joint material and foreign matter which might impair adhesion of sealant.

C. Clean and prime joints in accordance with manufacturer’s instructions.

D. Verify that joint backing and release tapes are compatible with sealant.

E. Perform preparation in accordance with manufacturer’s instructions.
F. Protect elements surrounding the work of the Section from damage or disfiguration.

3.03 INSTALLATION

A. Install sealant in accordance with manufacturer’s instructions.

B. Measure joint dimensions and size materials to achieve required 2:1 width/depth ratios.

C. Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width.

D. Install bond breaker where joint backing is not used.

E. Joint of excessive depth must be brought to proper depth by driving in continuous joint backing of proper size. Joint backing shall be accurately positioned with the joint to establish and control the uniform designated thickness of the sealant. Exercise care in the installation of the joint backing to see that the backing is not set too far below the surface, thereby increasing the depth of the sealant. Depth of sealing compounds will be maintained in accord with the manufacturer’s instructions relative to ratio of width to depth. All joint backing shall be used 30 percent under compression and care shall be taken that the backing is not stretched so that it will, at a later time, recover and damage the sealant applied over it.

F. Install sealant with sufficient pressure to completely fill the void space and to assure complete wetting of contact area to obtain uniform adhesion. During the application, keep tip of nozzle at the bottom of joint, forcing sealant to fill from bottom to top. Move tip along joint at a rate as to completely fill the joint.

G. Tool all sealants smooth and concave with adjacent surfaces unless detailed to be finished below the surface.

3.04 CLEANING AND REPAIRING

A. Clean work under provisions of Section 017400.

B. Clean adjacent soiled surfaces.

C. Repair or replace defaced or disfigured finishes caused by work of this Section.

3.05 PROTECTION OF FINISHED WORK

A. Protect finished installation under provisions of Section 015000.

B. Protect sealants until cured.

END OF SECTION
PART 1  GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section Includes:
1. Pre-finished aluminum door frames for interior use.
2. Pre-finished sound control aluminum door frames for interior use.
3. Pre-finished aluminum window frames for interior use.
4. Pre-finished aluminum framing systems for interior use.
5. Pre-finished aluminum doors for interior use.
6. Pre-finished accessories, including glazing, fasteners and brackets.

B. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction:
1. AAMA 603.8 - Performance Requirements and Test Procedures for Pigmented Organic Coatings on Extruded Aluminum.
7. ASTM E413 – Classification of Sound Rating Insulation.
8. NAAMM - “Metal Finishes Manual for Architectural and Metal Products’.

1.03 SUBMITTALS

A. Submit under the provisions of Section 01300.

B. Product Data: For each type of product indicated. Include construction details, material descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.
C. Templates: Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the interior aluminum door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.

D. Shop Drawings: Include the following:
1. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
2. Locations of reinforcement and preparations for hardware.
3. Details of each different wall opening condition. Include requirements for steel framing at partitions for fit and securing of frames, partition widths and tolerances, direction of framing members, clips and attachments.
4. Details of anchorages, joints, field splices, and connections.
5. Details of accessories.
6. Details of moldings, removable stops, and glazing.
7. Elevations of each door design.
8. Details of doors, including vertical and horizontal edge details and metal thicknesses.
9. Details of preparations for power, signal, and control systems.

E. Samples for Verification: Provide at the request of architect, prepared Samples as indicated below:
1. Framing Member: 12 inches long.
2. Corner Fabrication: 12-by-12-inch-long, full-size window corner, including full-size sections of extrusions with factory-applied color finish.
3. Aluminum chips in full range manufacturer’s standard finishes for architect’s color selection.

F. Interior Aluminum Door and Frame Schedule: Use same designations indicated on Drawings. Coordinate with Door Hardware schedule and glazing.

1.04 QUALITY ASSURANCE

A. Source Limitations: Obtain interior aluminum frames and doors through one source from a single qualified manufacturer.

B. Manufacturer Qualifications: A firm experienced in the manufacturing of interior aluminum framing systems and doors with a minimum five (5) years successful in-service performance providing product similar to those indicated for this project, including pre-engineering and pre-fabricating all components of aluminum framing systems and doors.

C. Installer Qualifications: An experienced installer with a minimum five years (5) experience who has completed aluminum framing systems and door installations similar in material, design, and extent to those indicated for this project and whose work has resulted in construction with a record of successful in-service performance.

D. Aesthetic Effects: Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect’s approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

E. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 (neutral pressure at 40” above sill) or UL 10C.
1. Provide labels permanently fastened on each frame or door within size limits established by NFPA and the testing authority.

F. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Label each individual glazed lite.

G. Smoke-Control Door Assemblies: Comply with NFPA 105.
H. Pre-Installation Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing interior aluminum frames and doors and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver interior aluminum frames and doors individually protective wrapped within cartons and marked for the corresponding scheduled opening. Do not bulk pack frames.

B. Inspect frames upon delivery for damage.
   1. Repair minor damage to pre-finished products as recommended by manufacturer.
   2. Replace frames that cannot be satisfactorily repaired.

C. Store interior aluminum frames and doors at Project site under cover and as near as possible to final installation location. Do not use covering material that will cause discoloration of aluminum finish.

1.06 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of interior aluminum frame openings by field measurements before fabrication and indicate measurements on Shop Drawings submittals.

B. Do not install aluminum frames and doors until area of work has been completely enclosed and interior is protected from the elements.

C. Maintain temperature and humidity in areas of installation within reasonable limits, as close as possible to final occupancy standards. If necessary, provide artificial heating, cooling and ventilation to maintain required environmental conditions.

1.07 WARRANTY

A. Provide manufacturer's written warranty against defects in materials and workmanship upon final completion and acceptance of Work in this section.
   1. Warrant framing and door finishes against defects and excessive fading and non-uniformity in color for a period of 5 years.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Frameworks Manufacturing.
   2. Custom Components Company.
   3. Versatrac Frames, a Division of American Door Products Inc.
   4. Western Integrated Materials, Inc.
   5. Raco Interior Products, Inc.
   6. Or approved equivalent

2.02 MATERIALS

A. Extruded Aluminum: ASTM B 221 alloy 6063-T5 or alloy and temper required to suit structural and finish requirements.

B. Recycled Content of Aluminum Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 50 percent.

C. INTERIOR ALUMINUM FRAMES
   1. Provide interior aluminum framing components complying with dimensions, profiles, and relationships to adjoining work of components as indicated on Drawings. Provide frames that are adjustable for partition types and throat openings, or that are fitted to each partition
type, meeting the throat opening and required clearances per frame manufacturer's recommendations. Reinforce for specified hinges, strikes, and closers.

2. Type II Framing System: Provide frames with the following characteristics:
   a. Rectilinear design.
   b. 1-1/2 inch face profile.
   c. Snap on trim:
      1) 1-1/2 inch.
   d. .062 inch rabbet wall thickness.
   e. Standard throat sizes (drywall partition thickness): as indicated on drawings.

3. Glass Trim: Extruded aluminum, not less than 0.062 inch thick, designed for glass thickness indicated with removable snap-in casing trim, glazing stops, and door stops without exposed fasteners.

4. Fire Rated Frames: Fabricate frames in accordance with NFPA80, listed and labeled by a qualified testing agency. Maximum fire rating required is 20 minutes (without hosestream test).

D. INTERIOR ALUMINUM DOORS

1. General: Provide 1-3/4 inch doors of type and design indicated, not less than 0.062 inch thick material.

2. Aluminum Stile & Rail Type Swinging Doors: Door stiles and rails to have tubular design with the following characteristics:
   a. Stiles:
      1) Medium Stile (3-3/4").
   b. Rails:
      1) 3-3/4" Top Rail.
      2) 9-1/2" Bottom Rail.

3. Snap-in stops with factory applied glazing gaskets for 1/4", 3/8", or 1/2" thick glass.

2.03 ACCESSORIES

A. Fasteners: Aluminum, nonmagnetic, stainless-steel or other noncorrosive metal fasteners compatible with frames, stops, panels, reinforcement plates, hardware, anchors, and other items being fastened.

B. Door Silencers: Manufacturer's standard continuous mohair, wool pile, or vinyl seals.

C. Glazing Gaskets: Manufacturer's standard extruded or molded plastic, to accommodate glazing thickness indicated.

D. Glazing: Comply with requirements in Division 08 Section, "Glazing."

E. Hardware: As specified in Division 08 Section, "Door Hardware".

2.04 FABRICATION

A. FRAME CONSTRUCTION

1. Factory pre-engineer and pre-cut interior aluminum frame components to the greatest extent practical. Linear glazing components fabricated in the field are not allowed. Allow for 2 inches excess vertical length for scribing to suit floor conditions. Face trim to be pre-cut to match jamb lengths. Machine jambs and prepare for hardware, with concealed plates, drilled and tapped as required, fastened in frame with concealed screws.

2. Provide concealed corner reinforcements and alignment clips for precise joints at butt or mitered connections.

3. Hardware Preparation: Factory interior aluminum frames to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates as specified in Division 08 Section, "Door Hardware."
   a. Reinforce frames to receive surface mounted door hardware. Machine jambs and prepare for hardware, with concealed reinforcement plates, drilled and tapped as required and fastened within frame with concealed screws.
b. Locate hardware as indicated.
c. Coordinate locations of conduit, wiring boxes, and power transfers for electrical connections with Division 26 Sections.

4. Fabricate frames for glazing with removable stops to allow glazing replacement without dismantling frame.

5. Fabricate all components to allow secure installation without exposed fasteners.

B. DOOR CONSTRUCTION

1. Factory pre-engineer aluminum doors and components to the greatest extent practical.

2. Hardware Preparation: Factory interior aluminum doors to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates as specified in Division 08 Section, "Door Hardware."
   a. Reinforce doors to receive surface mounted door hardware. Machine and prepare for hardware, with concealed reinforcement plates, drilled and tapped as required and fastened within door with concealed screws.
   b. Locate hardware as indicated.
   c. Coordinate locations of conduit and power transfers for electrical connections with Division 26 Sections.

3. Clearances for Non-Fire-Rated Door Frames: Not more than 1/8 inch at jambs and heads, not more than 1/4 inch between pairs of doors. Not more than 3/4 inch at bottom.

4. Fabricate kits for glazing with removable stops to allow glazing replacement without dismantling.

2.05 ALUMINUM FINISHES

A. General: Comply with NAAMM’s "Metal Finishes Manual for Architectural and Metal Products' for recommendations for apply and designated finishes. Exposed surfaces to be free of scratches and other serious blemishes.

B. Factory finish extruded frame components so that any part exposed to view upon completion of installation will be uniform in finish and color.

C. Clear anodic coating: Comply with AAMA 607.1.
   1. Class 2, AAM12C22A31 clear anodized coating, 0.4-.07 mill thickness minimum.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify wall thickness does not exceed standard tolerances allowed by specified frame throat sizes.

C. General Contractor to verify the accuracy of dimensions given to frame and door manufacturer for pre-cut openings.

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

3.02 INSTALLATION

A. General: Install and set interior aluminum frames plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
   1. At fire-protection-rated openings, install frames according to NFPA 80.

B. Install frame components in the longest possible lengths with no component less than 48 inches.
   1. Fasten to suspended ceiling grid at 48 inches on center maximum, using #6 sheet metal screws or other fasteners approved by frame manufacturer.
2. Use concealed installation clips to produce tightly fitted and aligned splices and connections.
3. Secure clips to extruded main-frame components and not to snap-in or trim members.
4. Do not use screws or other fasteners exposed to view when installation is complete.

3.03 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition.

B. Clean exposed frame surfaces promptly after installation, using cleaning methods recommended by frame manufacturer and according to AMMA 609 & 610.

C. Touch up marred areas so that touch up is not visible from a distance of 48 inches. Remove and replace frames that cannot be satisfactorily repaired.

3.04 PROTECTION

A. Provide protection as required to assure that frames will be without damage or deterioration upon substantial completion of the project.

END OF SECTION
PART 1  GENERAL

1.01  SCOPE OF WORK

A. Furnishing of and paying for all labor, materials, services, equipment and appliances necessary for execution and completion of all work specified herein and as shown on drawings.

B. Section includes:
1. Solid core veneer faced flush doors including labeled, and non-labeled.
2. Vision panel frames required for installing glass in wood (labeled or non-labeled) doors.
3. Factory finishing.
4. Factory glazing installation.
5. Sizing by manufacturer.
6. Machining by manufacturer.

1.02  REFERENCES

G. ASTM E413 - Classification for Rating Sound Insulation; 2010.
K. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives; 2016.
M. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.
N. UL 752 - Standard for Bullet-Resisting Equipment; Current Edition, Including All Revisions.
P. WDMA I.S. 1A - Interior Architectural Wood Flush Doors; 2013.
1.03 SUBMITTALS

A. See Section 01 3000 – Administrative Requirements for submittal procedures.

B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.

C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, Factory finishing, cutouts for glazing and other details.
   1. Provide the information required by WDMA I.S 1A – Industry Standard for Interior Architectural Wood Flush Doors.
   2. Provide a letter of compliance to substantiate this project will meet or exceed Quality Standards.

D. Specimen warranty.

E. Samples: Provide construction samples of doors, approximately 5 by 5 inches (125 by 125 mm), with door faces and vertical edges representing actual construction to be used.

F. Samples: Submit two samples of door veneer, 8 x 10 inch in size illustrating wood grain, stain color, and sheen.

G. Manufacturer’s Installation Instructions: Indicate special installation instructions.

H. Warranty, executed in Owner’s name.

1.04 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 01 7200.

B. Submittals

1.05 PROJECT WARRANTIES, OPERATION AND MAINTENANCE DATA

A. Submit under provisions of Section 01 7250.

B. Warranty (Article 1.09)

1.06 QUALITY ASSURANCE

A. WDMA I.S 1A Architectural Wood Flush Doors. Premium grade construction, Custom A grade veneer.


1.07 REGULATORY REQUIREMENTS

A. Conform to applicable code for fire rated doors.

1.08 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01 6000.
B. Do not deliver or store doors in damp areas. Relative humidity should range from 20 percent to 60 percent. Do not subject material to extremely high or low humidity. Storage area should be dry and well ventilated.

C. Stack doors on level supports covered with a sheet of plywood or heavy cardboard to protect the face of the bottom door. Cover the top door of stack in a similar manner. Protect all doors from exposure to light with dark color polyethylene or similar material. Seal top and bottom of edges with tinted sealer if stored more than one week.

D. When handling doors, move them with clean hands or wear clean gloves. (Bare hands leave finger marks and soil stains.) Carry doors, do not drag across each other or against other surfaces.

E. Comply with requirements of referenced standard WDMA I.S 1A Architectural Wood Flush Doors and manufacturer’s written instructions.

1.09 WARRANTY

A. All wood doors shall be guaranteed for life of original installation, in writing, by the manufacturer, to be free from any defects which shall make them unsuitable for the use for which they were intended. Warp in excess of 1/4 inch in 7 feet for door 3'-6" wide by 7'-0" high shall be considered a defect under the terms of this warranty. Warranty shall provide for replacement, rehanging and refinishing at no extra cost to the Owner.

B. Warranty to begin at the date of project Certificate of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wood Veneer Faced Doors:
   2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FLUSH WOOD DOORS, GENERAL

A. All Doors: See drawings for locations and additional requirements.
   2. Wood Veneer Faced Doors: 5-ply bonded unless otherwise indicated.
   3. WDMA I.S.1 – A Performance Grade: Extra Heavy Duty

B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction, lumber stile and rail construction.
   1. Provide solid core doors at all locations.
   2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with International Building Code (“positive pressure”); UL or WH (ITS) labeled without any visible seals when door is open.
   3. Non-Rated Solid Core and 20 Minute Rated Doors: Structural Composite Lumber Core, plies and faces as indicated above.
C. Fire Rated Doors: Mineral core, Type FD, plies and faces as indicated above; with core blocking
   as required to provide adequate anchorage of hardware without through-bolting.
   1. Hardware Blocking: Provide labeled doors with hardware reinforcement blocking, including
      lock blocks and top, bottom and intermediate rail blocking.
   2. Lock Blocks: Not less than 5 x 18 inches.
   3. Rail Blocks: Not less than 5 inches wide by full core thickness.
   4. All Reinforcement Blocking: In compliance with the manufacturer’s labeling requirements
      and not of mineral material similar to the core.

2.03 DOOR FACINGS

A. Wood Veneer Facings for Factory Stained Finish: (WD-1)
   1. Veneer Grade: A custom grade
   2. Species: Cherry
   3. Cut: Plain Sliced
   4. Vertical Edges: Same species as face veneer.
   5. Pair: Pair match each pair; set match pairs within 10 feet of each other when doors are
      closed.

B. Facing Application:

C. Facing Adhesive: Type I or Type II Adhesive Bond Durability – WDMA TM-6.

2.04 ACCESSORIES

A. Glazing Stops: Wood with metal clips for rated doors, same species as door, mitered corners;
   prepared for countersink style tamper proof screws.

B. Astragals for Non-Rated Double Doors: Steel, T shaped, overlapping and recessed at face
   edge.

C. Astragals for Fire Rated Double Doors: Steel, T shaped, overlapping and recessed at face
   edge, specifically for double doors.

2.05 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores constructed with stiles and rails.

C. Vertical Exposed Edge of Stiles: Same species as veneer facing. Bonded to structural
   composite lumber, concealing edges of cross-band.

D. Fit door edge trim to edge of stiles after applying veneer facings.

E. Provide solid blocks at lock edge and top of door for closer for hardware reinforcement.
   1. Provide solid blocking for other through-bolted hardware.

F. Factory machine doors for window blind units, louvers and hardware other than surface-
   mounted hardware, in accordance with hardware requirements and dimensions.

G. Factory fit doors for frame opening dimensions identified on shop drawings, with edge
   clearances in accordance with specified quality standard.
H. Provide edge clearances in accordance with the quality standard specified.

2.06 DOORS WITH METAL EDGE PROTECTION

A. Mortise type, formed from 0.050 inch thick type 302 stainless steel having No. 4 finish, width equal to door thickness by not more than 5/8 inch by 40 inches long, unless otherwise indicated, and bent to fit contour of stile.

2.07 FACTORY FINISHING - WOOD VENEER DOORS

A. Transparent Finish:
   1. Grade: Premium.

B. Factory finish doors in accordance with approved sample.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify frame opening conditions under provisions of Section 01 3900.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION


B. Factory-Finished Doors: Do not field cut or trim if fir or clearance is not correct, replace door.

C. Pilot drill screw and bolt holes.

D. Machine cut for hardware. Core for handsets and cylinders.

E. Coordinate installation of doors with installation of frames and hardware.

F. Coordinate installation of glass and glazing.

3.03 PREFITTING AND PREMACHINING

A. Prefitting Clearances (all clearances are maximum allowable dimensions):
   1. Hinge Edge: 1/8 inch clearance
   2. Lock Edge: 1/8 inch clearance, bevel edge 1/8 inch in 2 inches
   3. Meeting Edges of Pairs: 1/16 inch per leaf, bevel edge 1/8 inch in 2 inches
   4. Top: 1/8 inch clearance
5. Bottom: 1/2 inch clearance over decorative floor covering; 1/4 inch from top of threshold, if scheduled.

3.04 ADJUST AND CLEAN

A. Replace and rehang doors which are hinge-bound and do not swing or operate freely.

B. Refinish or replace job finished doors damaged during installation.

C. Upon completion of the work of this section, remove from the premises all debris relating to the conduct of this portion of the work.

END OF SECTION
PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnishing of and paying for all labor, materials, services, equipment and appliances necessary for execution and completion of all work specified herein and as shown on drawings.

B. Section includes:
   1. Stile and Rail Doors.
   2. Factory Prefitting and Matching.
   3. Factory finishing.

1.02 REFERENCES

F. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives; 2016.

1.03 SUBMITTALS

A. See Section 01 3000 – Administrative Requirements for submittal procedures.

B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics. Provide documents showing compliance to the following: WDMA attributes, validating the specified WDMA Performance Duty Level.
   1. Adhesive Bonding Durability: WDMA TM-6
   2. Cycle Slam: WDMA TM-7
   3. Hinge Loading: WDMA TM-8
   4. Screw Holding: WDMA TM-10
      a. Door Face
      b. Vertical Door Edge
      c. Horizontal Door Edge (applies when hardware is attached)

C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, Factory finishing, cutouts for glazing and other details.
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2. Provide a letter of compliance to substantiate this project will meet or exceed Quality Standards.
3. Materials
4. Surface Grain Directions
5. Assembly methods
6. Joint details
7. Fastening methods
8. Accessories
9. Hardware compliance for fire-rated applications
10. Door Sizes
11. Fire rating
   a. Neutral Pressure – UL 10B
   b. Positive Pressure – UL 10C

D. Specimen warranty.

E. Samples: Submit two samples of door veneer, 12 x 12 inch in size illustrating wood grain, stain color, and sheen.

F. Manufacturer’s Installation Instructions: Indicate special installation instructions.

G. Warranty, executed in Owner’s name.

1.04 PROJECT RECORD DOCUMENTS
A. Submit under provisions of Section 01 7200.
B. Submittals

1.05 PROJECT WARRANTIES, OPERATION AND MAINTENANCE DATA
A. Submit under provisions of Section 01 7250.
B. Warranty (Article 1.09)

1.06 QUALITY ASSURANCE
A. Manufacturer Qualifications: Shall be a company specializing in the manufacture of stile and rail doors with a minimum of 10 years’ experience.
B. Fire Ratings: Fire rated doors shall comply with local building codes as enforced by the AHJ. Doors shall be installed in accordance with NFPA 80. All doors shall bear the appropriate certification labels. Manufacture fire rated doors under the UL or ITS/WH factory inspection program providing the degree of fire protection capability indicated by the door schedule drawings. Provide metal labels permanently fastened on each fire door at an authorized and licensed facility as evidence of compliance with procedures of the labeling agency. Labels are not to be removed, defaced or made illegible while the door is in service per NFPA 80. Fire labels are not to be painted or pre-finished.
C. Storage and Handling: Doors shall be stored and handled in accordance with the manufacturer’s recommendations and the WDMA—Appendix Section—“Care and Installation at Job Site.”
D. Warranty: Provide Manufacturer's standard warranty form, signed by manufacturer, in which manufacturer agrees to repair or replace doors that are defective in materials or workmanship for the life of the original installation of the door.
   1. Provide lifetime warranty for all interior doors.
   2. Provide three year warranty for all exterior doors.

1.07 REGULATORY REQUIREMENTS

A. Conform to applicable code for fire rated doors.

1.08 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01 6000.

B. Do not deliver or store doors in damp areas. Relative humidity should range from 20 percent to 60 percent. Do not subject material to extremely high or low humidity. Storage area should be dry and well ventilated.

C. Stack doors on level supports covered with a sheet of plywood or heavy cardboard to protect the face of the bottom door. Cover the top door of stack in a similar manner. Protect all doors from exposure to light with dark color polyethylene or similar material. Seal top and bottom of edges with tinted sealer if stored more than one week.

D. When handling doors, move them with clean hands or wear clean gloves. (Bare hands leave finger marks and soil stains.) Carry doors, do not drag across each other or against other surfaces.

E. Comply with requirements of referenced standard WDMA I.S 6A Architectural Wood Flush Doors and manufacturer’s written instructions.

1.09 WARRANTY

A. All wood doors shall be guaranteed for life of original installation, in writing, by the manufacturer, to be free from any defects which shall make them unsuitable for the use for which they were intended. Warp in excess of 1/4 inch in 7 feet for door 3'-6" wide by 7'-0" high shall be considered a defect under the terms of this warranty. Warranty shall provide for replacement, rehanging and refinishing at no extra cost to the Owner.

B. Warranty to begin at the date of project Certificate of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wood Veneer Faced Doors:
   2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 DOOR CONSTRUCTION

A. Description: Interior Non-Rated Doors
   1. Type: Aspiro™ Series.
2. Door Thickness:
   a. Non fire-rated applications: 1-3/4”
   b. Fire-rated applications: 1-3/4”

3. Construction Type:
   a. Cope & Stick; joinery using ½” X 4” dowels.
   b. Joints to have minimum 1 dowel.

4. Construction Materials:
   a. Stiles and rails shall be constructed of Structural Composite Lumber (SCL) with a
      minimum ¾” solid hardwood edge.
   b. Muntin bars shall have ¼” X 2-1/2” dowels at every joint.
   c. Pressure fit joints using a Type II Adhesive.
   d. Raised panels shall be minimum thickness of 1-1/8” with raise of panel of solid lumber
      material matching face species, rim banded with mitered corners.

5. Veneer: Veneers to be 1/16” thickness, Grade A.
   a. Species: Cherry
   b. Cut: Plain Sliced
   c. Matching (Lay-up): Pair match each pair; set match pairs within 10 feet of each other
      when doors are closed.

6. Door Panel Top Design:
   a. Square Top

7. Panel Types:
   a. Flat Panel: 5/8”

8. Panel Construction
   a. Panels shall be manufactured with face veneer directly to core material
   b. Flat panels shall be minimum thickness of 5/8”

9. Panel Material
   a. Flat Panel: Particle Core

10. Sticking Types:
    a. Square

B. Description: Interior Fire-Rated Doors
1. See drawings for required ratings.
2. Labeled doors shall confirm to the following applicable building codes.
   a. Neutral Pressure—Tested to UL 10B
   b. Positive Pressure—Tested to UL 10C
      i. Positive Pressure doors are to be of Category A construction.
         Category A includes doors evaluated without an edge-sealing system on the door
         and frame and doors evaluated with a sealing system incorporated (concealed or
         visible) into the edge of the door.

2.03 DOOR FABRICATION

   A. Fabricate doors in accordance with one of the following Quality Assurance Standards.
      1. WDMA I.S.6A-Premium Grade Construction

   B. Veneer to be Grade A unless specified as other

   C. Prefit and bevel doors 1/8” in 2”, ensuring proper gaps are maintained on fire doors to comply
      with NFPA 80 requirements.

   D. All doors shall be machined for specified hardware that is not surface applied.
2.04 FINISHING

A. All doors shall be factory finished with manufacturers’ standard Conversion Varnish and standard sheen. (Unless otherwise indicated).

B. Finish coating to be:
   1. Clear

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine doors and installed door frames, with Installer present, before hanging doors.
   1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs. Any deficiencies must be corrected prior to door installation.
   2. Reject doors with defects.

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

3.02 INSTALLATION

A. Hardware: For installation, see Section 087100 “Door Hardware.

B. Installation Instructions: Install doors to comply with manufacturer’s written instructions and referenced quality standard, and as indicated.
   1. Install fire-rated doors according to NFPA 80.
   2. Install smoke- and draft-control doors according to NFPA 105.

C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
   1. Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors.
      Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide ¼ inch (6.4 mm) from bottom of door to top of threshold unless otherwise indicated.
      a. Comply with NFPA 80 for fire-rated doors.
      2. Bevel non-fire-rated doors 1/8 inch in 2 at lock and hinge edges.
      3. Trim bottom rail only to extent permitted by labeling agency.

D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

E. Factory-Finished Doors: Do not trim factory finished doors for width.

3.03 ADJUSTING

A. Operation: Correct any deficiency that prohibits the door from swinging or operating freely. Do not remove hinge screws after initial insertion. Shims used for alignment purposes must be inserted between hinge and frame. Do not insert shims between hinge and door.

B. To prevent stile failure, insure that door closers are properly adjusted and do not limit the door opening swing. Limit door opening swing only with a properly located stop.
C. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes the following types of non-security type access doors:
   1. Wall access doors.
   2. Fire-rated wall access doors.
   3. Ceiling access doors.
   4. Security access doors.

1.03 SUBMITTALS

A. Product data for each type of access door assembly specified, including details of construction relative to materials, individual components, profiles, finishes, and fire-protection ratings (if required).
   1. Include complete schedule, including types, general locations, sizes, wall and ceiling construction details, latching or locking provisions, and other data pertinent to installation.
   2. Include operating instructions and maintenance data.

1.04 QUALITY ASSURANCE

A. Single-Source Responsibility: Obtain access doors for entire Project from one source and by a single manufacturer.

B. Fire-Rated Door Assemblies: Units that comply with NFPA 80, are identical to door and frame assemblies tested for fire-test-response characteristics per test method as indicated below, and are labeled and listed by UL, Warnock Hersey, or another testing and inspecting agency acceptable to authorities having jurisdiction.

C. Size Variations: Obtain Architect-Engineer's acceptance of manufacturer's standard size units, which may vary slightly from sizes indicated.

1.05 COORDINATION

A. Verification: Determine specific locations and sizes for access doors needed to gain access to concealed equipment, and indicate on schedule specified under "Submittals" Article.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Acudor Products Inc.
2. Bar-Co Access Doors
3. Cesco Products.
7. Milcor LP.
8. Nystrom Products Co.

2.02 MATERIALS

A. Steel Sheet: ASTM A 366/A 366M commercial-quality, cold-rolled steel sheet with baked-on, rust-inhibitive primer.

B. Zinc-Coated Steel Sheet: ASTM A 591/A 591M, Electrolytic zinc-coated steel sheet with Class C coating and phosphate treatment to prepare surface for painting.

2.03 NON-SECURITY ACCESS DOORS/PANELS

A. Insulated, Fire-Rated Access Doors: Self-latching units consisting of frame, trim, door, insulation, and hardware, including automatic closer, interior latch release, and complying with the following requirements:
   1. Trimless Frame For Gypsum Wallboard Walls: Perimeter frame complying with the following requirements:
      a. Metal: 0.0598-inch- (1.52-mm-) thick zinc-coated steel sheet.
      b. Frame Configuration: Zinc-coated steel sheet edge trim with both face and back flanges; face flange formed to receive joint compound, with thickness required to fit over edges of adjoining gypsum board panels.
   2. Door: 0.0359-inch- (0.91-mm-) thick steel sheet, welded pan type.
   3. Hinges: Continuous type.
   4. Latches: Bolt type, operated by flush key device.
   5. Insulation: 2-inch- (50.8-mm-) thick mineral-fiber insulation.
   6. Fire-Protection Rating For Doors in Corridor Walls: 1 hour (minimum).

B. Trimless, Flush Access Doors for Gypsum Board: Units consisting of frame, concealed edge trim, door, hardware, and complying with the following requirements:
   1. Frame: 0.0598-inch- (1.52-mm-) thick steel sheet.
   2. Door: 0.0747-inch- (1.90-mm-) thick steel sheet.
   3. Concealed, Gypsum Board Edge Trim: 0.0299-inch (0.76-mm) zinc-coated or galvanized-steel sheet with face flange formed to receive joint compound.
   4. Hinge: Concealed spring pin or continuous type.
   5. Locks: Minimum one cylinder lock with key. If more than one lock required the rest to be screwdriver operated cams.

C. Framed, Flush Doors For Masonry or Concrete: Comply with requirements of Paragraphs A and B above, except that door is to be furnished with exposed frame.

2.04 SECURITY ACCESS DOORS/PANELS

A. Equivalent to Nystrom High Security Access Door with the following requirements:
   1. Frame: 2” x 2” x 3/16” steel angle flush to edge of frame. Frame to have mounting anchor straps.
   2. Door: 10 gauge steel plate
3. Hinge: Surfaced-mounted, heavy-duty butt hinges, welded to door and frame.
4. Size: 24” x 24”
5. Latch: Detention type deadbolt lock with paracentric key.
6. Flange: Exposed
7. Installation: Wall or ceiling
8. Finish: 5 stage iron phosphate preparation with prime coat of white alkyd baked-on enamel.

2.05 FABRICATION

A. General: Manufacture each access door assembly as an integral unit ready for installation.

B. Steel Access Doors and Frames: Continuous welded construction. Grind welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access panels to types of supports indicated.
   1. For gypsum board assemblies, furnish frames with edge trim for gypsum board or gypsum base.

C. Locking Devices: Furnish number required to hold door in flush, smooth plane when closed.
   1. Cylinder Lock: Furnish 2 keys per lock and key all locks alike.

PART 3 - EXECUTION

3.01 PREPARATION

A. Advise Installers of other work about specific requirements relating to access door installation, including sizes of openings to receive access door and frame, as well as locations of supports, inserts, and anchoring devices. Furnish inserts and anchoring devices for access doors that must be built into other construction. Coordinate delivery with other work to avoid delay.

3.02 INSTALLATION

A. Comply with manufacturer’s instructions for installing access doors.

B. Set frames accurately in position and attach securely to supports with plane of face panels aligned with adjacent finished surfaces.

C. Install concealed-frame access doors flush with adjacent finish surfaces.

3.03 ADJUST AND CLEAN

A. Adjust hardware and panels after installation for proper operation.

B. Remove and replace panels or frames that are warped, bowed, or otherwise damaged.

END OF SECTION
PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnishing of and paying for all labor, materials, services, appliances and equipment necessary for execution, installation and completion of all work specified herein and as shown on drawings.

B. Section includes:
   1. Aluminum framing system storefront type windows and closure members.
   2. Transition members connecting components, adapters, mountings and molds as required for a complete installation of the systems specified herein.
   3. Glazing, glazing beads, trim, aluminum receptors, sills, gaskets, components, adapters, mountings, molds and anchors as required for and integral to the complete installation of all storefront framing systems specified herein.
   4. Fins, anchors, shims, steel and aluminum structural internal support members, furring and other devices as may be required for full and complete watertight and structural mounting on these windows and their associated frames.

1.02 REFERENCES

A. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; 2015.

B. AAMA 501.2 - Field Check of Metal Storefronts, Curtain Walls, and Sloped Glazing Systems for Water Leakage; 2009.


G. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2015.


1.03 PERFORMANCE REQUIREMENTS

A. TRIFAB 451 Framing System:
1. Air infiltration shall be tested in accordance with ASTM E283. Infiltration shall not exceed 0.06 CFM per sq. ft. at a static air pressure differential of 6.24 psf.
2. Water infiltration shall be tested in accordance with ASTM E331. There shall be no leakage at a minimum static air pressure differential of 8 psf as defined in AAMA 501.
3. When tested in accordance with ASTM E330, the maximum deflection of any member shall not exceed 1/175 of its span and when the load is removed there shall be no evidence of permanent deformation or damage when tested under a static air design load of 35.0 psf.
4. Thermal Transmittance (U-factor): When tested to AAMA Specification 1503, the thermal transmittance (U-factor) shall not be more than:
   a. Glass to Exterior – 0.47 (low-e)
   b. Glass to Center – 0.44 (low-e)
   c. Glass to Interior – 0.41 (low-e)
5. Condensation Resistance (CRF): When tested to AAMA Specification 1503, the condensation resistance factor shall not be less than:
   a. Glass to Exterior – 70frame and 69glass (low-e)
   b. Glass to Center – 62frame and 68glass (low-e)
   c. Glass to Interior – 56frame and 67glass (low-e)
6. Sound Transmission Class (STC) and Outdoor-Indoor Transmission Class (OITC): When tested to AAMA Specification 1801 and in accordance with ASTM E1425 and ASTM E90, the STC and OITC Rating shall not be less than:
   a. Glass to Exterior – 38 (STC) and 31 (OITC).
   b. Glass to Center – 37 (STC) and 30 (OITC).
   c. Glass to Interior – 38 (STC) and 30 (OITC).

   a. Large-Missile Impact: For aluminum-framed systems located within 30 feet (9.1 m) of grade.
   b. Small-Missile Impact: For aluminum-framed systems located above 30 feet (9.1 m) of grade.

1.04 SUBMITTALS
   A. Submit under provisions of Section 013000.
   B. Shop Drawings: Shall be at full scale as far as practical and shall show in detail the construction of all parts of this work, including all field dimensions, metal and glass type, thicknesses, methods of joining, details of all field connections and anchorage, fastening, joint packing, caulking, methods and locations of all sealants, metal finishes, and all locations of all sealants, internal drainage system, and all other information pertinent to demonstrating compliance with Specifications.
   C. Product Data: Provide component dimensions; describe components within assembly, anchorage and fasteners, glass and infill, and caulking.
   D. Samples: Submit two samples 4 inches by 6 inches in size illustrating prefinished aluminum surface.

1.05 PROJECT RECORD DOCUMENTS
   A. Submit under provisions of Section 017200.
   B. Submittals

1.06 PROJECT WARRANTIES, OPERATION AND MAINTENANCE DATA
   A. Submit under provisions of Section 017250.
   B. Warranties

1.07 DELIVERY, STORAGE AND HANDLING
   A. Deliver, store, protect, and handle products to site under provisions of Section 016000.

1.08 QUALITY ASSURANCE
   A. Installer Qualifications: An installer which has had successful experience with installation of the same or similar units required for the project and other projects of similar size and scope.
B. Manufacturer Qualifications: A manufacturer capable of providing aluminum-framed storefront system that meet or exceed performance requirements indicated and of documenting this performance by inclusion of test reports, and calculations.

C. Source Limitations: Obtain aluminum-framed storefront system through one source from a single manufacturer.

D. Product Options: Drawings indicate size, profiles, and dimensional requirements of aluminum-framed storefront system and are based on the specific system indicated. Do not modify size and dimensional requirements.
   1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect’s approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

E. 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 mockup for type(s) of storefront elevation(s) indicated shown on Drawings.

F. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01.


H. Structural-Sealant Joints: Design reviewed and approved by structural-sealant manufacturer.

1.09 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of aluminum-framed storefront openings by field measurements before fabrication and indicate field measurements on Shop Drawings.

1.10 WARRANTY

A. Aluminum Storefront System items will remain free against failure of material and workmanship to include excessive leakage, excessive deflections, deterioration of metal anodized finish systems in excess of normal weathering for minimum period of two years. Warranty to be non-prorated and to repair or replace any parts or material that do not withstand normal use.

B. Warranties to begin at the date of project Certificate of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Kawneer Company, Inc.
   1. Trifab 451T (Thermal) Stick Framing System, Front Profile
   2. System Dimensions: 2” x 4 ½”
   3. Glass: Interior Glazed unless otherwise noted on drawings.

B. Substitution: Under provisions of Section 016000.
2.02 MATERIALS

A. Aluminum Extrusions: Alloy and temper recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070” (1.8 mm) wall thickness at any location for the main frame and complying with ASTM B 221: 6063-T6 alloy and temper.

B. Fasteners: Aluminum, nonmagnetic stainless steel or other materials to be non-corrosive and compatible with aluminum framing members, trim hardware, anchors, and other components.

C. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.

D. Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.

E. Sealant: For sealants required within fabricated storefront system, provide permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.

F. Tolerances: Reference to tolerances for wall thickness and other cross-sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and Data.

2.03 STOREFRONT FRAMING SYSTEM

A. Thermal Barrier (Trifab™ 451T):
   1. Kawneer IsoLock™ Thermal Break with a 1/4” (6.4 mm) separation consisting of a two-part chemically curing, high-density polyurethane, which is mechanically and adhesively joined to aluminum storefront sections.
      a. Thermal Break shall be designed in accordance with AAMA TIR-A8 and tested in accordance with AAMA 505.

B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials. Where exposes shall be stainless steel.

D. Perimeter Anchors: When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.

E. Packing, Shipping, Handling and Unloading: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

F. Storage and Protection: Store materials protected from exposure to harmful weather conditions. Handle storefront material and components to avoid damage. Protect storefront material against damage from elements, construction activities, and other hazards before, during and after storefront installation.
2.04 GLAZING SYSTEMS

A. Glazing: As specified in Division 08 Section “Glazing”.

B. Glazing Gaskets: Manufacturer’s standard compression types; replaceable, extruded EPDM rubber.

C. Spacers and Setting Blocks: Manufacturer’s standard elastomeric type.

D. Bond-Breaker Tape: Manufacturer’s standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.

E. Glazing Sealants: For structural-sealant-glazed systems, as recommended by manufacturer for joint type, and as follows:
   1. Structural Sealant: ASTM C 1184, single-component neutral-curing silicone formulation that is compatible with system components with which it comes in contact, specifically formulated and tested for use as structural sealant and approved by a structural-sealant manufacturer for use in aluminum-framed systems indicated.
      a. Color: Black
   2. Weatherseal Sealant: ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; single-component neutral-curing formulation that is compatible with structural sealant and other system components with which it comes in contact; recommended by structural-sealant, weatherseal-sealant, and aluminum-framed-system manufacturers for this use.

2.05 ACCESSORY MATERIALS

A. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Division 07 Section “Joint Sealants”.

B. Bituminous Paint: Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 30 mil (0.762 mm) thickness per coat.

2.06 FABRICATION

A. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
   1. Profiles that are sharp, straight, and free of defects or deformations.
   2. Accurately fit joints; make joints flush, hairline and weatherproof.
   3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
   4. Physical and thermal isolation of glazing from framing members.
   5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
   7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

B. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.

C. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.
C. Storefront Framing: Fabricate components for assembly using manufacturer’s standard installation instructions.

D. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.07 ALUMINUM FINishes

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Factory Finishing:

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify site opening conditions under provisions of Section 013900.

B. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify rough opening dimensions, levelness of sill plate and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather tight framed aluminum storefront system installation.
   1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
   2. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
   3. Proceed with installation only after unsatisfactory conditions have been corrected.

C. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

A. Install per Shop Drawings, and manufacturer’s written instructions for installing aluminum-framed storefront system, accessories, and other components.

B. Install aluminum-framed storefront system level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.

C. Set sill members in bed of sealant or with gaskets, as indicated, for weather tight construction.

D. Install aluminum-framed storefront system and components to drain condensation, water penetrating joints, and moisture migrating within aluminum-framed storefront to the exterior.

E. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
3.03 FIELD QUALITY CONTROL

A. Field Tests: Architect shall select storefront units to be tested as soon as a representative portion of the project has been installed, glazed, perimeter caulked and cured. Conduct tests for air infiltration and water penetration with manufacturer's representative present. Tests not meeting specified performance requirements and units having deficiencies shall be corrected as part of the contract amount.

1. Testing: Testing shall be performed by a qualified independent testing agency. Refer to Testing Section for payment of testing and testing requirements. Testing Standard per AAMA 503, including reference to ASTM E 783 for Air Infiltration Test and ASTM E 1105 Water Infiltration Test.

a. Air Infiltration Tests: Conduct tests in accordance with ASTM E 783. Allowable air infiltration shall not exceed 1.5 times the amount indicated in the performance requirements or 0.09 cfm/ft², whichever is greater.

b. Water Infiltration Tests: Conduct tests in accordance with ASTM E 1105. No uncontrolled water leakage is permitted when tested at a static test pressure of two-thirds the specified water penetration pressure but not less than 6.24 psf (300 Pa).

B. Manufacturer's Field Services: Upon Owner's written request, provide periodic site visit by manufacturer's field service representative.

3.04 TOLERANCES

A. Variation from Plane: 0.03 inches per foot or 0.25 inches per 30 feet, whichever is less.

B. Misalignment of Two Adjoining Members Abutting in Plane: 0.015 inches.

3.05 ADJUSTING, CLEANING, AND PROTECTION

A. Clean aluminum surfaces immediately after installing aluminum-framed storefronts. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

B. Clean glass immediately after installation. Comply with glass manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.

C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

3.06 PROTECTION OF FINISHED WORK

A. Protect finished work under provisions of Section 015000.

END OF SECTION
PART 1 GENERAL

1.01 SCOPE OF WORK

A. The furnishing of and paying for all labor, materials, services, appliances and requirements necessary for the execution and completion of all work specified herein and as shown on drawings.

B. Section includes:
   1. Items of swinging door hardware, as specified herein or obviously necessary to complete the door hardware installation except for those items which are specifically excluded from this section of the specifications.

1.02 REFERENCES

A. The following list of references are made a part of this section of the specifications as a means of determining preparation standards of steel doors, wood doors, and frames for finish hardware.
   1. Door and Hardware Institute (DHI)
   2. Builders Hardware Manufacturers Association (BHMA).
   3. Steel Door Institute (SDI)


F. BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches; 2011.

G. BHMA A156.3 - American National Standard for Exit Devices; 2014.

H. BHMA A156.4 - American National Standard for Door Controls - Closers; 2013.

I. BHMA A156.5 - American National Standard for Cylinders and Input Devices for Locks; 2014.

J. BHMA A156.6 - American National Standard for Architectural Door Trim; 2010.


L. BHMA A156.8 - American National Standard for Door Controls - Overhead Stops and Holders; 2010.

M. BHMA A156.9 - American National Standard for Cabinet Hardware; 2010.


R. BHMA A156.16 - American National Standard for Auxiliary Hardware; 2013.


T. BHMA A156.18 - American National Standard for Materials and Finishes; 2012.


AA. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.

AB. BHMA A156.115W - Hardware Preparation in Wood Doors with Wood or Steel Frames; 2006.

AC. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; 2004.

AD. DHI WDHS.3 - Recommended Locations for Architectural Hardware for Flush Wood Doors; 1993; also in WDHS-1/WDHS-5 Series, 1996.


AH. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

AI. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. Submit under provisions of 013000.
B. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

C. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
   1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
   2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
   3. Content: Include the following information:
      a. Type, style, function, size, label, hand, and finish of each door hardware item.
      b. Manufacturer of each item.
      c. Fastenings and other pertinent information.
      d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
      e. Explanation of abbreviations, symbols, and codes contained in schedule.
      f. Mounting locations for door hardware.
      g. Door and frame sizes and materials.
      h. Warranty information for each product.
   4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

D. Shop Drawings: Details of electrified access control hardware indicating the following:
   1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
      a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
      b. Complete (risers, point-to-point) access control system block wiring diagrams.
      c. Wiring instructions for each electronic component scheduled herein.
   2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

E. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

F. Informational Submittals:
   1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
G. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals.

1.04 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 017200.

B. Submittals

C. Certifications (Reference Article 3.03)

1.05 PROJECT WARRANTIES, OPERATION AND MAINTENANCE DATA

A. Submit under provisions of Section 017250.

B. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

C. Warranty (Article 1.11)

1.06 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

D. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
   1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
   2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

E. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

F. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

G. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures.

H. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.07 QUALIFICATIONS

A. Only those suppliers approved by the Architect as having proven technical skill and experience will be acceptable. The supplier shall be capable of interpreting the Drawings, Specifications, shop drawings and all details. He shall cooperate in all respects with the Architect, Owner, Application Contractor and all affected trades.

B. The supplier shall employ competent consultants experienced in detailing, servicing and supplying types of hardware required and shall be available at all times to work with the Contractor and the Architect.

C. The contract to the supplier for furnishing finish hardware shall be awarded by the Contractor subject to approval by the Architect and owner of all samples and applications specified. Upon approval of schedule, the supplier shall supply additional copies of schedules in quantities required for fabrication of other related materials. All information necessary for other fabricators to complete their parts of related work shall accompany this transmittal. All coordination between various trades affected by the Finish Hardware Schedule shall be satisfactorily and clearly coordinated by the finish hardware supplier.

1.08 REGULATORY REQUIREMENTS

A. Fire Labeled Openings:
1. Door hardware for all labeled fire openings shall comply in all respects to the National Board of Fire Underwriter's requirements for the ratings of the openings called for on the drawings. All locking and latching devices, closers and closer arms shall bear visible evidence of UL approval.

B. Americans with Disabilities Act:
1. Door openings through which the disabled will pass or have access to shall be in full compliance with the Government codes and regulation.
   a. All passage latches and locksets shall be operated by a lever handle.
   b. The force required to open a door shall not exceed five foot pounds for interior doors and eight foot pounds for exterior doors. The opening force may vary depending on the type of HVAC system and the weather conditions.
   c. Thresholds may not extend more than 1/2” above the finished floor.

1.09 DELIVERY, HANDLING AND STORAGE

A. Deliver, store, protect and handle products to site under provisions of Section 016000.

B. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

C. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

D. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.10 COORDINATION

A. Coordinate work under provisions of Section 013900.

B. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

C. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

D. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.11 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
   1. Structural failures including excessive deflection, cracking, or breakage.
   2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:
   1. Ten years for mortise locks and latches.
   2. Five years for exit hardware.
   3. Twenty five years for manual surface door closer bodies.
   4. Two years for electromechanical door hardware.

1.12 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.01 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

C. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

D. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.02 HANGING DEVICES

A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles as specified in the Door Hardware Sets.
   1. Quantity: Provide the following hinge quantity, unless otherwise indicated:
      a. Two Hinges: For doors with heights up to 60 inches.
      b. Three Hinges: For doors with heights 61 to 90 inches.
      c. Four Hinges: For doors with heights 91 to 120 inches.
      d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
   2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
      a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
      b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
   a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
   b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following where indicated in the Hardware Sets or on Drawings:
   a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.

5. Acceptable Manufacturers:
   a. Hager Companies (HA).
   b. McKinney Products (MK).

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
   1. Acceptable Manufacturers:
      a. McKinney Products (MK).
      b. Pemko Manufacturing (PE).

2.03 DOOR OPERATING TRIM

A. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
   1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
   2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
   3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
   4. Fasteners: Provide manufacturer’s designated fastener type as indicated in Hardware Sets.
   5. Acceptable Manufacturers:
      a. Rockwood Manufacturing (RO).
      b. Trimco (TC).

2.04 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
   1. Acceptable Manufacturers:
      a. Corbin Russwin Hardware (RU).
      b. No Substitution.

C. Cylinders: Original manufacturer cylinders complying with the following:
   1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.

3. Bored-Lock Type: Cylinders with tailpieces to suit locks.

4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.

5. Keyway: Manufacturer’s Standard.

D. Keying System: Each type of lock and cylinders to be factory keyed.
   1. Conduct specified “Keying Conference” to define and document keying system instructions and requirements.
   2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
   3. Existing System: Key locks to Owner’s existing system.

E. Key Quantity: Provide the following minimum number of keys:
   1. Change Keys per Cylinder: Two (2)
   2. Master Keys (per Master Key Level/Group): Five (5).

F. Construction Keying: Provide construction master keyed cylinders.

G. Key Registration List (Bitting List):
   1. Provide keying transcript list to Owner’s representative in the proper format for importing into key control software.
   2. Provide transcript list in writing or electronic file as directed by the Owner.

2.05 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.
   1. Acceptable Manufacturers:
      b. No Substitution.

B. Knurling: Where required by local code provide knurling or abrasive coating to all levers on doors leading to hazardous areas such as mechanical rooms, boiler and furnace rooms, janitor closets, and as otherwise required or specified.

2.06 AUXILIARY LOCKS

A. Mortise Deadlocks, Small Case: ANSI/BHMA A156.36, Grade 1, small case mortise type deadlocks constructed of heavy gauge wrought corrosion resistant steel. Steel or stainless steel bolts with a 1” throw and hardened steel roller pins. Deadlocks to be products of the same source manufacturer and keyway as other specified locksets.
   1. Acceptable Manufacturers:
      a. Corbin Russwin Hardware (RU) - DL4100 Series.
      b. No Substitution.

2.07 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer’s standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.08 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
   a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
   b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
6. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
7. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
9. Rail Sizing: Provide exit device rails factory sized for proper door width application.
10. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.
1. Acceptable Manufacturers:
   a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
   b. No Substitution.
DOOR CLOSERS

2.09 Door Closers

A. All door closers specified herein shall meet or exceed the following criteria:
   1. General: Door closers to be from one manufacturer, matching in design and style, with the
      same type door preparations and templates regardless of application or spring size. Closers
      to be non-handed with full sized covers including installation and adjusting information on
      inside of cover.
   2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed
      for use of fire rated doors.
   3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed
      and verified by UL.
   4. Size of Units: Comply with manufacturer's written recommendations for sizing of door
      closers depending on size of door, exposure to weather, and anticipated frequency of use.
      Where closers are indicated for doors required to be accessible to the physically
      handicapped, provide units complying with ANSI ICC/A117.1.
   5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in
      Hardware Sets.
   6. Closers shall not be installed on exterior or corridor side of doors; where possible install
      closers on door for optimum aesthetics.
   7. Closer Accessories: Provide door closer accessories including custom templates, special
      mounting brackets, spacers and drop plates as required for proper installation. Provide
      through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 certified
   surface mounted, institutional grade door closers with complete spring power adjustment, sizes
   1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening
   force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body
   construction, with adjustable backcheck, closing sweep, and latch speed control valves. Provide
   non-handed units standard.
   1. Acceptable Manufacturers:
      a. Corbin Russwin Hardware (RU) - DC6000 Series.
      b. Norton Door Controls (NO) - 8500 Series.

2.10 ARCHITECTURAL TRIM

A. Door Protective Trim
   1. General: Door protective trim units to be of type and design as specified below or in the
      Hardware Sets.
   2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2” less than door width
      (LDW) on stop side of single doors and 1” LDW on stop side of pairs of doors, and not more
      than 1” less than door width on pull side. Coordinate and provide proper width and height as
      required where conflicting hardware dictates. Height to be as specified in the Hardware
      Sets.
   3. Where plates are applied to fire rated doors with the top of the plate more than 16” above
      the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer’s
      catalog and template book for specific requirements for size and applications.
   4. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop),
      fabricated from the following:
      a. Stainless Steel: 300 grade, 050-inch thick.
   5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the
      Hardware Sets. Provide countersunk screw holes.
   6. Acceptable Manufacturers:
      a. Rockwood Manufacturing (RO).
2.11 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
   1. Acceptable Manufacturers:
      a. Rockwood Manufacturing (RO).

2.12 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
   1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
   1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Acceptable Manufacturers:
   1. National Guard Products (NG).
   2. Pemko Manufacturing (PE).

2.13 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.14 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.02 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.


3.03 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Integrated Wiegand access control products are required to be installed through current members of the ASSA ABLOY "Certified Integrator" (CI) program.

D. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.04 FIELD QUALITY CONTROL

A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.05 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.06 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.07 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.08 HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
**B. HW-1**


**Description:** Access Controlled (Lock)

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Specification</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hinge</td>
<td>4</td>
<td>Section 2.2 for size and quantity US26D MK</td>
<td>MK</td>
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<tr>
<td>Passage Latch</td>
<td>1</td>
<td>ML2010 103E4</td>
<td>626 RU</td>
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<td>Magnetic Lock</td>
<td>1</td>
<td>by owner</td>
<td>SU</td>
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<tr>
<td>Surface Closer</td>
<td>1</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
</tr>
<tr>
<td>Kick Plate</td>
<td>1</td>
<td>K1050 10&quot; x 2&quot; LDW BEV CSK US32D RO</td>
<td>RO</td>
</tr>
<tr>
<td>Door Stop</td>
<td>1</td>
<td>409, 440 or 9-336 as required US32D RO</td>
<td>RO</td>
</tr>
<tr>
<td>Silencer - Gasketing</td>
<td>3</td>
<td>608 or S88D as required</td>
<td>RO</td>
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<tr>
<td>Card Reader</td>
<td>1</td>
<td>by owner</td>
<td>00</td>
</tr>
<tr>
<td>Motion Sensor</td>
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<td>by owner</td>
<td>00</td>
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<tr>
<td>Push Button</td>
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<td>by owner</td>
<td>00</td>
</tr>
<tr>
<td>Power Supply</td>
<td>1</td>
<td>by owner</td>
<td>00</td>
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</table>

**Notes:** Operation: presentation of authorized credential thru wall mounted reader to signal magnetic lock to release and allow entry. Egress by exit motion sensor, emergency exit button and exit push pad. Opening to release (fail safe) if power fails or by signal from Fire Alarm System.

**C. HW-2**


**Description:** Access Controlled (Exit)

<table>
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<th>Item</th>
<th>Quantity</th>
<th>Specification</th>
<th>Supplier</th>
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</thead>
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<tr>
<td>Hinge</td>
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<td>Section 2.2 for size and quantity US26D MK</td>
<td>MK</td>
</tr>
<tr>
<td>Magnetic Lock</td>
<td>1</td>
<td>by owner</td>
<td>SU</td>
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<tr>
<td>Exit Device (rim, passage)</td>
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<td>ED5200A 103910</td>
<td>630 RU</td>
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<tr>
<td>Surface Closer</td>
<td>1</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
</tr>
<tr>
<td>Kick Plate</td>
<td>1</td>
<td>K1050 10&quot; x 2&quot; LDW BEV CSK US32D RO</td>
<td>RO</td>
</tr>
<tr>
<td>Door Stop</td>
<td>1</td>
<td>409, 440 or 9-336 as required US32D RO</td>
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<tr>
<td>Silencer - Gasketing</td>
<td>3</td>
<td>608 or S88D as required</td>
<td>RO</td>
</tr>
<tr>
<td>Card Reader</td>
<td>1</td>
<td>by owner</td>
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<tr>
<td>Motion Sensor</td>
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<td>by owner</td>
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<tr>
<td>Push Button</td>
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<td>by owner</td>
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</tr>
<tr>
<td>Power Supply</td>
<td>1</td>
<td>by owner</td>
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</table>

**Notes:** Operation: presentation of authorized credential thru wall mounted reader to signal magnetic lock to release and allow entry. Egress by exit motion sensor, emergency exit button and exit push pad. Opening to release (fail safe) if power fails or by signal from Fire Alarm System.
### D. HW-3
Doors: 11022, 11065, 12006, 2022, 2067, 3032, 3042, LL001
Description: Break Room

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<th>Item</th>
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<th>Code</th>
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<td>Hinge</td>
<td>Section 2.2 &amp; quantity</td>
<td>US26D</td>
<td>MK</td>
</tr>
<tr>
<td>Passage Latch</td>
<td>ML2010 103E4</td>
<td>626</td>
<td>RU</td>
</tr>
<tr>
<td>Surface Closer</td>
<td>DC6200 (as required)</td>
<td>689</td>
<td>RO</td>
</tr>
<tr>
<td>Kick Plate</td>
<td>K1050 10” x 2” LDW BEV CSK</td>
<td>US32D</td>
<td>RO</td>
</tr>
<tr>
<td>Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D</td>
<td>RO</td>
</tr>
<tr>
<td>Silencer - Gasketing</td>
<td>608 or S88D as required</td>
<td>RO</td>
<td></td>
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### E. HW-4
Doors: 11016, 11037, 11063, 2082, 3015, 3024, 4004, 4047, 4057, LL006A, LL006B
Description: Conference Room

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Material</th>
<th>Code</th>
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<tbody>
<tr>
<td>Hinge</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D</td>
<td>MK</td>
</tr>
<tr>
<td>Passage Latch</td>
<td>ML2010 103E4</td>
<td>626</td>
<td>RU</td>
</tr>
<tr>
<td>Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D</td>
<td>RO</td>
</tr>
<tr>
<td>Silencer - Gasketing</td>
<td>608 or S88D as required</td>
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### F. HW-5
Doors: 11027, 11072, 2075, 3029
Description: Copy Room

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<th>Material</th>
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<tbody>
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<td>Hinge</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D</td>
<td>MK</td>
</tr>
<tr>
<td>Passage Latch</td>
<td>ML2010 103E4</td>
<td>626</td>
<td>RU</td>
</tr>
<tr>
<td>Surface Closer</td>
<td>DC6200 (arm as required)</td>
<td>689</td>
<td>RO</td>
</tr>
<tr>
<td>Kick Plate</td>
<td>K1050 10” x 2” LDW BEV CSK</td>
<td>US32D</td>
<td>RO</td>
</tr>
<tr>
<td>Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D</td>
<td>RO</td>
</tr>
<tr>
<td>Silencer - Gasketing</td>
<td>608 or S88D as required</td>
<td>RO</td>
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### G. HW-6
Doors: 2002A, 4002A, 4029A, 4037A, 4068A
Description: Courtroom Entrance

<table>
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<tr>
<th>Item</th>
<th>Description</th>
<th>Material</th>
<th>Code</th>
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</thead>
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<tr>
<td>Hinge</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D</td>
<td>MK</td>
</tr>
<tr>
<td>Fire Rated Rim Exit</td>
<td>ED5200A K157 x 6P M52</td>
<td>630</td>
<td>RU</td>
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<tr>
<td>Pull</td>
<td>RM4200-94&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface Closer</td>
<td>DC6200 (arm as required)</td>
<td>689</td>
<td>RO</td>
</tr>
<tr>
<td>Kick Plate</td>
<td>K1050 10” x 2” LDW BEV CSK</td>
<td>US32D</td>
<td>RO</td>
</tr>
<tr>
<td>Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D</td>
<td>RO</td>
</tr>
<tr>
<td>Silencer - Gasketing</td>
<td>608 or S88D as required</td>
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H. HW-7
Doors: 2001, 4001, 4028, 4036, 4067
Description: Courtroom Vestibule

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<th>Description</th>
<th>Model Number</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>4 Hinge</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
<td>1</td>
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<tr>
<td>1 Fire Rated Rim Exit</td>
<td>ED5200A K157 x 6P M52</td>
<td>630 RU</td>
<td>1</td>
</tr>
<tr>
<td>1 Cylinder</td>
<td>1000-100-</td>
<td>626 RU</td>
<td>1</td>
</tr>
<tr>
<td>1 Pull</td>
<td>RM4200-94&quot;</td>
<td>US32D RO</td>
<td>1</td>
</tr>
<tr>
<td>1 Surface Closer</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
<td>1</td>
</tr>
<tr>
<td>1 Kick Plate</td>
<td>K1050 10&quot; x 2&quot; LDW BEV CSK</td>
<td>US32D RO</td>
<td>1</td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
<td>1</td>
</tr>
<tr>
<td>3 Silencer - Gasketing</td>
<td>608 or S88D as required</td>
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I. HW-8
Doors: 2106B
Description: Corridor Single

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<th>Quantity</th>
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<td>4 Hinge</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
<td>1</td>
</tr>
<tr>
<td>1 Passage Latch</td>
<td>ML2010 103E4</td>
<td>626 RU</td>
<td>1</td>
</tr>
<tr>
<td>1 Surface Closer</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
<td>1</td>
</tr>
<tr>
<td>1 Kick Plate</td>
<td>K1050 10&quot; x 2&quot; LDW BEV CSK</td>
<td>US32D RO</td>
<td>1</td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
<td>1</td>
</tr>
<tr>
<td>3 Silencer - Gasketing</td>
<td>608 or S88D as required</td>
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J. HW-9
Doors: 11068
Description: Data Storage

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<th>Description</th>
<th>Model Number</th>
<th>Quantity</th>
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</thead>
<tbody>
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<td>4 Hinge</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
<td>1</td>
</tr>
<tr>
<td>1 Storeroom Lock</td>
<td>ML2057 103E4</td>
<td>626 RU</td>
<td>1</td>
</tr>
<tr>
<td>1 Surface Closer</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
<td>1</td>
</tr>
<tr>
<td>1 Kick Plate</td>
<td>K1050 10&quot; x 2&quot; LDW BEV CSK</td>
<td>US32D RO</td>
<td>1</td>
</tr>
<tr>
<td>3 Silencer - Gasketing</td>
<td>608 or S88D as required</td>
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K. HW-10
Description: Detention

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<tbody>
<tr>
<td>1 HBO</td>
<td>All hardware by detention supplier</td>
<td>RO</td>
<td>00</td>
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<tr>
<td></td>
<td>Refer to spec section 11 1910</td>
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L. HW-11
Description: Management Office

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<th>Item</th>
<th>Description</th>
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<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>4 Hinge</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
<td>1</td>
</tr>
<tr>
<td>1 Office Lock</td>
<td>ML2051 103E4</td>
<td>626 RU</td>
<td>1</td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
<td>1</td>
</tr>
<tr>
<td>3 Silencer - Gasketing</td>
<td>608 or S88D as required</td>
<td>RO</td>
<td>1</td>
</tr>
<tr>
<td>1 Coat Hook</td>
<td>RM802</td>
<td>US26D RO</td>
<td>1</td>
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M. HW-12
Doors: 2028A
Description: Grand Jury Entrance

<table>
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<td>Hinge</td>
<td>4</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
</tr>
<tr>
<td>Fire Rated Rim Exit</td>
<td>1</td>
<td>ED5200A K157 x 6P M52</td>
<td>630 RU</td>
</tr>
<tr>
<td>Cylinder</td>
<td>1</td>
<td>1000-100-</td>
<td>626 RU</td>
</tr>
<tr>
<td>Pull</td>
<td>1</td>
<td>RM2230-36 Mtg-Type 16 MP</td>
<td>US32D RO</td>
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<tr>
<td>Surface Closer</td>
<td>1</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
</tr>
<tr>
<td>Kick Plate</td>
<td>1</td>
<td>K1050 10” x 2” LDW BEV CSK</td>
<td>US32D RO</td>
</tr>
<tr>
<td>Door Stop</td>
<td>1</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
</tr>
<tr>
<td>Silencer - Gasketing</td>
<td>3</td>
<td>608 or S88D as required</td>
<td>RO</td>
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N. HW-13
Doors: 11001, 11002, 11028, 11029, 11070, 11071, 12001, 12009, 12011, 2023, 2024, 2025, 2074, 2077, 2078, 3001, 3031, 3033, 3039, 3040, 3041, 4026, 4044
Description: Men - Women

<table>
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<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Hinge</td>
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<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
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<tr>
<td>Push Plate</td>
<td>1</td>
<td>70C</td>
<td>US32D RO</td>
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<tr>
<td>Pull Plate</td>
<td>1</td>
<td>BF 110x70C</td>
<td>US32D RO</td>
</tr>
<tr>
<td>Surface Closer</td>
<td>1</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
</tr>
<tr>
<td>Mop Plate</td>
<td>1</td>
<td>K1050 4” x 1” LDW BEV CSK</td>
<td>US32D RO</td>
</tr>
<tr>
<td>Kick Plate</td>
<td>1</td>
<td>K1050 10” x 2” LDW BEV CSK</td>
<td>US32D RO</td>
</tr>
<tr>
<td>Door Stop</td>
<td>1</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
</tr>
<tr>
<td>Silencer - Gasketing</td>
<td>3</td>
<td>608 or S88D as required</td>
<td>RO</td>
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O. HW-14
Doors: 11024, 11076, 12007, 2009, 2040, 2069, 3044, 4009, 4061
Description: Housekeeping

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<th>Item</th>
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<th>Notes</th>
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<td>Hinge</td>
<td>4</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
</tr>
<tr>
<td>Store Room Lock</td>
<td>1</td>
<td>ML2057 103E4</td>
<td>626 RU</td>
</tr>
<tr>
<td>Surface Closer</td>
<td>1</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
</tr>
<tr>
<td>Mop Plate</td>
<td>1</td>
<td>K1050 4” x 1” LDW BEV CSK</td>
<td>US32D RO</td>
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<tr>
<td>Kick Plate</td>
<td>1</td>
<td>K1050 10” x 2” LDW BEV CSK</td>
<td>US32D RO</td>
</tr>
<tr>
<td>Door Stop</td>
<td>1</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
</tr>
<tr>
<td>Silencer - Gasketing</td>
<td>3</td>
<td>608 or S88D as required</td>
<td>RO</td>
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P. HW-15
Description: Judge’s Office

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<th>Notes</th>
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<td>Hinge</td>
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<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
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<tr>
<td>Office Lock</td>
<td>1</td>
<td>ML2051 103E4</td>
<td>626 RU</td>
</tr>
<tr>
<td>Surface Closer</td>
<td>1</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
</tr>
<tr>
<td>Kick Plate</td>
<td>1</td>
<td>K1050 10” x 2” LDW BEV CSK</td>
<td>US32D RO</td>
</tr>
<tr>
<td>Door Stop</td>
<td>1</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
</tr>
<tr>
<td>Silencer - Gasketing</td>
<td>3</td>
<td>608 or S88D as required</td>
<td>RO</td>
</tr>
<tr>
<td>Coat Hook</td>
<td>1</td>
<td>RM802</td>
<td>US26D RO</td>
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Q. HW-16  
Doors: 4010, 4021  
Description: Jury Room

<table>
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<th>Section 2.2 for size and quantity</th>
<th>US26D</th>
<th>MK</th>
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<tr>
<td>4 Hinge</td>
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<tr>
<td>1 Classroom Lock</td>
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<td>ML2055 103E4</td>
<td>626 RU</td>
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<tr>
<td>1 Surface Closer</td>
<td></td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
<td></td>
<td></td>
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<tr>
<td>1 Kick Plate</td>
<td></td>
<td>K1050 10” x 2” LDW BEV CSK</td>
<td>US32D RO</td>
<td></td>
<td></td>
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<tr>
<td>1 Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3 Silencer - Gasketing</td>
<td></td>
<td>608 or S88D as required</td>
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R. HW-17  
Doors: LL016  
Description: Mechanical Pair

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<th>MK</th>
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<td>8 Hinge</td>
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<tr>
<td>1 Dust Proof Strike</td>
<td>570</td>
<td>2845 - 2945</td>
<td>US26D RO</td>
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<tr>
<td>1 Flush Bolt Set</td>
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<td>ML2057 103E4 M21</td>
<td>626 RU</td>
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<tr>
<td>1 Storeroom Lock</td>
<td>2600 Series LAR</td>
<td>US28 RO</td>
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<tr>
<td>1 Surface Closer</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Kick Plate</td>
<td>K1050 10” x 2” LDW BEV CSK</td>
<td>US32D RO</td>
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<td></td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
<td></td>
<td></td>
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<tr>
<td>3 Silencer - Gasketing</td>
<td></td>
<td>608 or S88D as required</td>
<td>RO</td>
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Notes: Knurled lever outside

S. HW-18  
Doors: 11004, 11006, 11008, 11010, 11014, 11015, 11018, 11019, 11020, 11021, 11023, 11025, 11026, 11032, 11033, 11035, 11036, 11038, 11039, 11040, 11041, 11042, 11043, 11044, 11045, 11046, 11047, 11048, 11049, 11050, 11053, 11054, 11055, 11056, 11057, 11058, 11059, 11060, 11061, 11062, 11064, 11066, 11067, 11073, 11074, 11075, 11078, 11079, 11080, 11081, 11082, 11083, 11085, 11086, 11087, 11088, 11089, 11090, 11091, 11092, 11093, 11094, 11095, 11096, 11097, 11098, 11099, 12008A, 12012, 2004, 2054, 2065, 2066, 2068, 2070, 2071, 2073, 2079, 2080, 2083, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 3003, 3005, 3007, 3009, 3013, 3014, 3020, 3022, 3023, 3025, 3026, 3027, 3028, 3038, 3047, 3048, 3049, 3050, 3053, 3059, 4066, LL004, LL007, LL008, LL012A, LL005  
Description: Standard Office

<table>
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<tr>
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<th>Quantity</th>
<th>Description</th>
<th>Section 2.2 for size and quantity</th>
<th>US26D</th>
<th>MK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Hinge</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1 Office Lock</td>
<td></td>
<td>ML2051 103E4</td>
<td>626 RU</td>
<td></td>
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<tr>
<td>1 Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Silencer - Gasketing</td>
<td></td>
<td>608 or S88D as required</td>
<td>RO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Coat Hook</td>
<td>RM802</td>
<td></td>
<td>US26D RO</td>
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</table>
Shelby County Government  
Renovations to the Criminal Justice Center  
Phases I, II & III  

**Renovations to the Criminal Justice Center Door Hardware**  

**Phases I, II & III**  

**T.  HW-19**  


Description: Secure Office (closer)  

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Model/Part</th>
<th>Notes</th>
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<tbody>
<tr>
<td>4 Hinge</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
<td></td>
</tr>
<tr>
<td>1 Passage Latch</td>
<td>ML2010 103E4</td>
<td>626 RU</td>
<td></td>
</tr>
<tr>
<td>1 Surface Closer</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
<td></td>
</tr>
<tr>
<td>1 Kick Plate</td>
<td>K1050 10&quot; x 2&quot; LDW BEV CSK</td>
<td>US32D RO</td>
<td></td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
<td></td>
</tr>
<tr>
<td>3 Silencer - Gasketing</td>
<td>608 or S88D as required</td>
<td>RO</td>
<td></td>
</tr>
<tr>
<td>1 Coat Hook</td>
<td>RM802</td>
<td>US26D RO</td>
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**U.  HW-20**  

Doors: 3054  

Description: Customer Service Entrance  

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<tr>
<th>Item</th>
<th>Description</th>
<th>Model/Part</th>
<th>Notes</th>
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<tr>
<td>1 Continuous Hinge</td>
<td>CFM83SLF-HD1</td>
<td>PE</td>
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<tr>
<td>1 Mortise Deadlock</td>
<td>MS1850S</td>
<td>628 AD</td>
<td></td>
</tr>
<tr>
<td>1 Thumbturn Cylinder</td>
<td>4066-01</td>
<td>130 AD</td>
<td></td>
</tr>
<tr>
<td>1 Cylinder</td>
<td>1000-100-</td>
<td>626 RU</td>
<td></td>
</tr>
<tr>
<td>1 Push Bar &amp; Pull</td>
<td>11047</td>
<td>US26D RO</td>
<td></td>
</tr>
<tr>
<td>1 Surface Closer</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
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**V.  HW-21**  

Doors: STAIR 1, STAIR 1-11, STAIR 1-3, STAIR 2-11, STAIR 3-11, STAIR 1-4, STAIR 2, STAIR 2-3, STAIR 2-4, STAIR 3, STAIR 3-3, STAIR 3-4  

Description: Stair  

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Model/Part</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>4 Hinge</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
<td></td>
</tr>
<tr>
<td>1 Exit Device (rim, passage)</td>
<td>ED5200A 103910</td>
<td>630 RU</td>
<td></td>
</tr>
<tr>
<td>1 Surface Closer</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
<td></td>
</tr>
<tr>
<td>1 Kick Plate</td>
<td>K1050 10&quot; x 2&quot; LDW BEV CSK</td>
<td>US32D RO</td>
<td></td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
<td></td>
</tr>
<tr>
<td>3 Silencer - Gasketing</td>
<td>608 or S88D as required</td>
<td>RO</td>
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**W.  HW-22**  

Doors: 11003, 11012, 11031, 11077, 11084, 11112, 11113, 12002, 2003, 2011, 2015, 2061, 2072, 2076, 2081, 2109, 2116, 3002, 3011, 3030, 3046, 3107, 3108, 4003, 4013, 4016, 4020, 4051, 4055, 4058, 4111, 4112  

Description: Storage  

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Model/Part</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>4 Hinge</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
<td></td>
</tr>
<tr>
<td>1 Storeroom Lock</td>
<td>ML2057 103E4</td>
<td>626 RU</td>
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<tr>
<td>1 Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
<td></td>
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<tr>
<td>3 Silencer - Gasketing</td>
<td>608 or S88D as required</td>
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### X. HW-23

Doors: 11034, 3052, 3056

Description: Storage (closer)

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<td>Section 2.2 for size and quantity</td>
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</tr>
<tr>
<td>1 Storeroom Lock</td>
<td>ML2057 103E4</td>
<td>626 RU</td>
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<tr>
<td>1 Surface Closer</td>
<td>DC6200 (arm as required)</td>
<td>689 RU</td>
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<tr>
<td>1 Kick Plate</td>
<td>K1050 10&quot; x 2&quot; LDW BEV CSK</td>
<td>US32D RO</td>
</tr>
<tr>
<td>1 Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
</tr>
<tr>
<td>3 Silencer - Gasketing</td>
<td>608 or S88D as required</td>
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### Y. HW-24


Description: Private Toilet

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<tr>
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<tr>
<td>4 Hinge</td>
<td>Section 2.2 for size and quantity</td>
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<tr>
<td>1 Privacy Set</td>
<td>ML2030 103E4 M19V</td>
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<tr>
<td>1 Mop Plate</td>
<td>K1050 4&quot; x 1&quot; LDW BEV CSK</td>
<td>US32D RO</td>
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<tr>
<td>1 Door Stop</td>
<td>409, 440 or 9-336 as required</td>
<td>US32D RO</td>
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<tr>
<td>3 Silencer - Gasketing</td>
<td>608 or S88D as required</td>
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### Z. HW-25

Doors: 2007, 4007, 4024, 4046, 4062

Description: Victim - Witness

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Specification</th>
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<tbody>
<tr>
<td>4 Hinge</td>
<td>Section 2.2 for size and quantity</td>
<td>US26D MK</td>
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<tr>
<td>1 Classroom Lock</td>
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<tr>
<td>1 Surface Closer</td>
<td>DC6200 (arm as required)</td>
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<td>1 Kick Plate</td>
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<td>608 or S88D as required</td>
<td>RO</td>
</tr>
</tbody>
</table>

END OF SECTION
1.01 SECTION INCLUDES
   A. Architectural Glass.
   B. Architectural Insulating Glass
   C. Frameless mirrors.
   D. Glazing Compounds and Accessories.

1.02 REFERENCES
   X. NFPA 257 - Standard on Fire Test for Window and Glass Block Assemblies; 2012.
AD. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

1.03 PERFORMANCE REQUIREMENTS

A. Select type and thickness of exterior glass to withstand dead loads and wind loads acting normal to plane of glass at design pressures calculated in accordance with ASCE 7 and applicable building codes.
   1. Use the procedure specified in ASTM E 1300 to determine glass type and thickness.
   2. Limit glass deflection to 1/200 or flexure limit of glass, whichever is less, with full recovery of glazing materials.
   3. Thicknesses listed are minimum.

B. Provide tempered glass at hazardous locations as indicated below and where shown on the drawings. Substitute fully tempered glass where drawings indicate annealed or heat strengthened glass in hazardous locations.
   1. Provide Fully Tempered Glass at all hazardous locations as defined by the International Building Code, 2006 Edition and as indicated below.
   2. Glass areas greater than 9 sf that are located less than 18 inches above the floor where the top edge is more than 36 inches (914 mm) above the finished floor.
   3. Glass in swinging and sliding doors.
   4. Fixed glass panels located in sliding doors assemblies.
   5. Glass within 24 inches (601 mm) of a door opening that is less than 60 inches (1524 mm) above the finished floor.

1.04 SUBMITTALS

A. Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
B. Samples: Sub two samples 6 x 6 inch (150 x 150 mm) in size of wire glass units.
C. Certificates: Certify that products meet or exceed specified requirements.
D. Manufacturer's Certificate: Certify that sealed insulated glass meets or exceeds specified requirements.

1.05 QUALITY ASSURANCE

B. Installer Qualifications: Company specializing in performing the work of this section with minimum three years experience.

1.06 ENVIRONMENTAL REQUIREMENTS

A. Do not install glazing when ambient temperature is less than 50 degrees F (10 degrees C).
B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

A. See Section 017250 - Closeout Submittals, for additional warranty requirements.
B. Provide a ten (10) year warranty to include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.

PART 2 PRODUCTS

2.01 FLAT GLASS MATERIALS

A. Manufacturers:

B. Safety Glass - 1/4 Inch (Type 1): Clear; heat-strengthened and fully tempered.
   1. Comply with ASTM C 1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select) and ASTM C 1048, kind HS and FT.
   2. Comply with 16 CFR 1201 test requirements for Category II.

C. Safety Glass – 1/2 Inch (Type 2): heat-strengthened and fully tempered.
   1. Comply with ASTM C 1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select) and ASTM C 1048, kind HS and FT.
   2. Comply with 16 CFR 1201 test requirements for Category II.
   3. Edges to be polished, full perimeter.
   4. Provide hole in glass as required for Glass Clamp steel pin. Refer to specification for clamps later in this section.

D. Sealed Insulated Glass Units (Type 3): Double pane with glass to elastomer edge seal.
   Solar control Low-E Tinted Insulating-Glass Units:
   1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
   2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
   3. Spacer Color: Black
   4. Edge Seal:
   5. Color: Black.
   6. Purge interpane space with dry air, hermetically sealed.
   7. Unit Overall Thickness 25 mm.
   8. Insulating Unit Construction: ¼ inch (6 mm) Clear Glass, “Solarban” 90 Solar Control (Sputtered) on second surface (2), + ½ inch (13 mm) air space + ¼ inch (6 mm) Clear Tempered Glass.
   9. Interspace Content: Air
   10. Outdoor Lite: Class 2 (tinted) float glass, 6 mm minimum thickness.
       a. Annealed
       b. Kind HS (heat strengthened) where required.
       c. Kind FT (fully tempered) where required.
       d. Tint Color: Clear
       e. Basis of Design Product:
          1) PPG Industries, Inc. Solarban 90 + Clear
       f. Solar Control Low-E coating: Sputtered on second surface.
       g. Basis of Design Product:
          1) PPG Industries, Inc., Solarban 90 (2).
   11. Indoor Lite: Class 2 (Clear) tempered glass, 6 mm minimum thickness
       a. Kind FT (fully tempered) where required.
       b. Tint Color: Clear
   13. Winter Nighttime U-Factor: 0.29 maximum.
   14. Summer Daytime U-Factor: 0.27 maximum
15. Solar Heat Gain Coefficient: 0.23 maximum.
17. Interior Visible Light Reflectance: 19 percent maximum.
18. Shading Coefficient: 0.27 maximum.
19. Light to Solar Gain: 2.22 maximum

2.03 MIRRORS (FRAMELESS GLASS)
A. ASTM C10.6, Type 1, No. 1 quality, 1/4 inch float glass selected for silvering, electrolytically copper plated by the galvanic process. Sizes as shown on drawings.

2.04 GLAZING ACCESSORIES
A. Setting Blocks: Silicone, 80 to 90 Shore A durometer hardness, ASTM C 864 Option I. Length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch (100 mm) x width of glazing rabbet space minus 1/16 inch (1.5 mm) x height to suit glazing method and pane weight and area.
B. Spacer Shims: Silicone, 50 to 60 Shore A durometer hardness, ASTM C 864 Option I. Minimum 3 inch (75 mm) long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.
C. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper; size as recommended by manufacturer for glazing channel and gazing material; black color.
   1. Manufacturers:
      d. Substitutions: Refer to Section 016000 - Product Requirements.
D. Glazing Gaskets: Resilient polyvinyl chloride extruded shape to suit glazing channel retaining slot; ASTM C 864 Option I; black color.
E. Glass Railing Clamps: to be C.R. Laurence Co., Inc. CRL "Z": Series, square type, Flat Base Clamps, Model Number Z912BS with optional steel pin, 316 Grade Stainless Steel with Brushed Finish. Glass utilized is to be Type 2, ½” thick safety glass. Coordinate steel pin location through glass at clamps with glass supplier.

2.05 SOURCE QUALITY CONTROL AND TESTS
A. Provide shop inspection and testing for insulated glass.
B. Test samples in accordance with ANSI Z97.1.

PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that openings for glazing are correctly sized and within tolerance.
B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.02 PREPARATION
A. Clean contact surfaces with solvent and wipe dry.
B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
C. Install sealants in accordance with ASTM C 1193 and FGMA Sealant Manual.
D. Install sealant in accordance with manufacturer’s instructions.

3.03 INSTALLATION - INTERIOR DRY METHOD (GASKET GLAZING)
A. Place setting blocks at 1/4 points with edge block no more than 6 inches (150 mm) from corners.
B. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

C. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.04 INSTALLATION - EXTERIOR DRY METHOD (TAPE AND GASKET SPLINE GLAZING)

A. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.

B. Place setting blocks at 1/4 points with edge block no more than 6 inches (150 mm) from corners.

C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.

D. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.

E. Trim protruding tape edge.

3.05 INSTALLATION - INTERIOR DRY METHOD (TAPE AND TAPE)

A. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.

B. Place setting blocks at 1/4 points with edge block no more than 6 inches (150 mm) from corners.

C. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.

D. Place glazing tape on free perimeter of glazing in same manner described above.

E. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

F. Knife trim protruding tape.

3.06 INSTALLATION – MIRRORS

A. Set mirrors with clips. Anchor rigidly to wall construction.

B. Place plumb and level.

3.07 MANUFACTURER’S FIELD SERVICES

A. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.

B. Monitor and report installation procedures and unacceptable conditions.

3.08 CLEANING

A. Remove glazing materials from finish surfaces.

B. Remove labels after Work is complete.

C. Clean glass and adjacent surfaces.

END OF SECTION
PART 1 GENERAL

1.01 SECTION INCLUDES
A. Interior Decorative/Privacy Window Film.

1.02 REFERENCES
C. ASTM E 308 – Standard Recommended Practice for Spectrophotometry and Description of Color in CIE 1931 System.

1.03 PERFORMANCE REQUIREMENTS
A. Fire Performance: Surface burning characteristics when tested in accordance ASTM E 84:
   1. Flame Spread: 25, maximum.
   2. Smoke Developed: 450, maximum.

1.04 SUBMITTALS
A. Submit under provisions of Section 01 3000.
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. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
D. Verification Samples: For each finish product specified, two samples representing actual product, color, and patterns.

1.05 QUALITY ASSURANCE
A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten (10) years experience.
B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five (5) years demonstrated experience in installing products of the same type and scope as specified.
   1. Provide documentation that the installer is authorized by the Manufacturer to perform Work specified in this section.
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, and sheen are approved by Architect.
   3. Refinish mock-up area as required to produce acceptable work.

1.06 DELIVERY, STORAGE, AND HANDLING
A. Store products in manufacturer's unopened packaging until ready for installation.
B. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.
1.07 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.

1.08 WARRANTY
   A. At project closeout, provide to Owner an executed current copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

PART 2 PRODUCTS
2.01 MANUFACTURERS
   A. Acceptable Manufacturer: 3M Window Film, which is located at: 3M Center Bldg. 0235-02-S-27; St. Paul, MN 55144-1000; Toll Free Tel: 888-364-3577; Tel: 651-736-1341; Email: ldbregel@mmm.com; Web: www.3m.com/windowfilm
   B. Requests for substitutions will be considered in accordance with provisions of Section 01 6000.

2.02 SINGLE PATTERNED FILM
   A. Fasara - Milano Decorative / Privacy Glazing Film:
      1. Ultraviolet Rejected (ASTM E 903): Not less than 99 percent.
      5. Shading Coefficient at 90 Degrees (Normal Incidence) (ASTM E 903): Not less than 0.75.

PART 3 EXECUTION
3.01 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.

3.02 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.

3.03 INSTALLATION
   A. Install in accordance with manufacturer's instructions.
   B. Install film on windows indicated on Drawings.
   C. Cut film edges neatly and square at a uniform distance of 1/8 inch (3 mm) to 1/16 inch (1.5 mm) of window sealant. Use new blade tips after 3 to 4 cuts.
   D. Spray the slip solution, composed of one capful of baby shampoo or dishwashing liquid to 1 gallon of water, on window glass and adhesive to facilitate proper positioning of film.
   E. Apply film to glass and lightly spray film with slip solution.
   F. Squeegee from top to bottom of window. Spray slip solution to film and squeegee a second time.
   G. Bump film edge with lint-free towel wrapped around edge of a 5-way tool.
H. Upon completion of film application, allow 30 days for moisture from film installation to dry thoroughly, and to allow film to dry flat with no moisture dimples when viewed under normal viewing conditions.

3.04 CLEANING

A. Remove left over material and debris from Work area. Use necessary means to protect film before, during, and after installation.

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

C. After application of film, wash film using common window cleaning solutions, including ammonia solutions, 30 days after application. Do not use abrasive type cleaning agents and bristle brushes to avoid scratching film. Use synthetic sponges or soft cloths.

END OF SECTION
PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnishing of and paying for all labor, services, appliances, materials and equipment necessary for execution, installation and completing of all work specified herein and as shown on drawings.

B. Section includes:
   1. Metal stud wall framing, their accessories and installation (interior).
   2. Ceiling framing system.
   3. Metal furring channels, clips, angles, etc. as required to complete this work.
   4. Fire rated and non-fire rated gypsum board wall, ceiling and column assembly.
   5. Gypsum wallboard.
   6. Installation of various devices required within this work for use of others. Devices shall be furnished and accurately located with erection drawings by using section. Install as required for maximum rigidity.
   7. Complete installation of access panels furnished by other sections, as required for access to their work.
   8. Taping, mudding, sanding and finishing of all gypsum board walls and ceilings.
   9. Trim accessories, polyurethane foam tape gaskets and caulking used within these systems.
   10. Anchors, nails, devices and accessories required to install complete all gypsum materials specified herein.
   11. Repair, replacement and patching of existing gypsum board walls, ceilings, etc. where existing is disturbed by this contract.

1.02 REFERENCES

A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.

B. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units; 2010 (Revised).


D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.


N. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.

O. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2014.


AE. GA-224 - Installation of Predecorated Gypsum Board; Gypsum Association; 2008.

AF. GA-226 - Application of Gypsum Board to Form Curved Surfaces; Gypsum Association; 2008.


1.03 SUBMITTALS

A. Submit under provisions of Section 013000.

B. Product Data:
   1. Framing: Provide data describing standard framing member material and finish, product criteria, load charts and limitations.
   2. Gypsum Board System: Product data on gypsum board, joint material, sound attenuation and fire blankets, firesafing insulation, acoustical sealant, joint material, gypsum finishing accessories, gaskets.

1.04 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 017200.

B. Submittals

1.05 QUALITY ASSURANCE

A. Work under this section will be done in accord with the recommendation of USG "Drywall" Construction Handbook, latest edition, unless otherwise specified herein,

1.06 QUALIFICATIONS

A. Applicator shall have a minimum of three years experience in the installation of gypsum board systems.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle product to site under provisions of Section 016000.

B. Delivery and Handling:
   1. Deliver materials to the project site with manufacturer's labels intact and legible.
   2. Handle materials with care to prevent damage.
   3. Deliver fire rated materials bearing testing agency label and required fire classification numbers.
C. Storage:  
1. Store materials inside under cover; stack flat, off floor.  
2. Stack wallboard so that long lengths are not over short lengths.  
3. Avoid overloading floor system.  
4. Store adhesives in dry area, provide protection against freezing at all times.

1.08 ENVIRONMENTAL CONDITIONS

A. Temperature: During cold weather, in areas receiving wallboard installation, maintain temperature range between 55 degrees F to 70 degrees F for 24 hours before, during and after gypsum wallboard and joint treatment application.

B. Ventilation:  
1. Provide ventilation during and following adhesives and joint treatment applications.  
2. Use temporary air circulators in enclosed areas lacking natural ventilation.  
3. Under slow drying conditions, allow additional drying time between coats of joint treatment.  
4. Protect installed materials from drafts during hot, dry weather.

C. Protection: Protect adjacent surfaces against damage and stains.

1.09 COORDINATION

A. Coordinate work under provisions of Section 013900.

PART 2 PRODUCTS

2.01 MANUFACTURERS - FRAMING MATERIAL

A. United States Gypsum Company

B. Other acceptable manufacturers:  
1. Southwest Metals, Inc., Carrollton, Texas  
2. Dietrich Industries, Inc., Pittsburgh, Pennsylvania  
3. Harrison Manufacturing Company, Memphis, Tennessee

C. Substitution: Under provisions of Section 016000.

2.02 FRAMING MATERIAL (INTERIOR WALLS)

A. Interior Drywall Studs and Accessories:  
1. Interior Drywall Studs:  
   a. Equivalent to USG "ST" Series, 25 gauge minimum thickness, galvanized interior stud. Stud gauge shall be based on a limiting height base on an allowable deflection of L/240 with type of wall system specified. Reference drawings for stud sizes, spacing and wall thickness.  
   b. Equivalent to USG "ST" Series 20 gauge studs, at all door frames (double studs), all borrowed light frames (double studs), framing around various items that cannot be moved otherwise during the renovation, and at any and/or all other locations as specifically shown on drawings.

2. Interior Floor and Ceiling Runners:  
   a. Equivalent to USG CR Galvanized Steel Runner. Same material and thickness as studs. Size as required to fit stud widths as shown on the drawings.
   b. Provide extended leg ceiling runners where occur under structural members.
2.03 FRAMING ACCESSORIES

A. Furring and Bracing Members: Of same material as studs, thickness to suit purpose.

B. USG Cold Rolled Channels: 16 gauge steel, 3/4 inch with 1/2 inch flange, 1-1/2 inch with 17/32 inch flange. Channels shall have black asphaltum paint.

C. USG Metal Furring Channels: Roll formed, hat-shaped sections made of 25 gauge corrosion resistant steel.

D. USG Z-Furring Channels: 24 gauge minimum corrosion resistant steel.

E. Screws and Fasteners:
   1. USG 7/16 inch Super Tite II for attaching metal studs to metal runners; use 5/8 inch where metal thickness exceeds standard 25 gauge.
   2. All others per manufacturer's instructions.
   3. Runner Fasteners: 5/32 inch diameter power driven type with a minimum of 1-1/4 inch minimum penetration into concrete.
   4. Powder actuated fastener, such as nails, eye pin hangers, etc. as required.

F. Miscellaneous angles, expansion bellows, channels, attachment devices, girders, braces, etc. to be standard USG galvanized or as recommended or required for secure rigid attachment of condition encountered in strict accord with the latest USG Drywall installation manual.

G. Primer: FSTT-P-645, for touchup of galvanized surfaces.

2.04 FINISHES - FRAMING MATERIAL

A. Studs and Runners: Galvanize to G-60 coating class meeting the requirements of ASTM A446.

B. Accessories: Same finish as framing members or meeting ASTM A123 Hot-Dip Galvanized to 1.25 oz/sq. ft.

2.05 CAVITY SHAFT WALL FRAMING AND ACCESSORIES

A. Cavity Shaft Wall Studs: Equivalent to USG Steel C-H, CH-L, and E-Studs in gauge and length required, hot-dipped galvanized.

B. Floor and Ceiling Runners: Equivalent to USG Steel J-Runners in gauge required, hot-dipped galvanized.

C. Steel Jamb Struts (For Door framing): Equivalent to USG Steel Jamb Strut, 20 gauge, hot-dipped galvanized in length required.

2.06 MANUFACTURER - GYPSUM BOARD MATERIAL

A. United States Gypsum Company

B. Other acceptable manufacturer: Georgia Pacific Corporation

C. Substitution: Under provisions of Section 016000.
2.07 GYPSUM BOARD MATERIAL

A. Standard Gypsum Board: 5/8 inch USG “Sheetrock” meeting, ASTM C36, maximum permissible length, ends square cut, tapered edges. (Used in all wall construction requiring non-labeled construction as shown on the drawings.)

B. Fire Rated Gypsum Board: 5/8 USG "Sheetrock" Firecode "C" meeting ASTM C36, maximum permissible length, ends square cut, tapered edges. (Used in all wall construction requiring labeled and non-labeled construction as shown on the drawings.)

C. Mold-Resistant Glass-Mat Gypsum Board: 5/8 inch USG Glass-Mat Panels Mold Tough meeting ASTM C1658, maximum permissible length, ends square cut, tapered edges. (Used in all walls or ceilings in wet area locations such as toilets, janitor closets and showers where gypsum board is scheduled.)

D. Mold-Resistant Fire Rated Glass-Mat Gypsum Board: 5/8 inch USG Glass-Mat Panels Mold Tough Firecode "X" meeting ASTM C1658, maximum permissible length, ends square cut, tapered edges. (Used in all walls or ceilings in wet area locations such as toilets, janitor closets and showers where gypsum board is scheduled.)

E. Gypsum Glass-Mat Tile Backer Board: 5/8 inch USG Durock Glass-Mat Tile Backer Board meeting ASTM C1178, Maximum permissible length, ends square cut, tapered edges. (used in all walls behind ceramic and porcelain tile where gypsum board is scheduled.)

F. Gypsum Liner Panels: 1 inch thick USG Liner Panels, beveled edges, 24 inches wide, length required. (used as part of 2 hour UL Shaft wall assembly).

2.08 ACCESSORIES


B. Joint Material:
   1. Joint Compounds: USG brand, type as recommended for the intended use.
      a. Sheetrock Setting-Type or Lightweight Setting-Type Joint Compound (20, 45, 90, 210, 300).
      b. Sheetrock Joint Compound (Taping, Topping, All Purpose).
      c. Sheetrock Ready-Mixed Joint Compound (Taping, Topping, All Purpose).
      d. Sheetrock Lightweight All Purpose Joint Compound Ready-Mixed (Plus 3).
   2. Joint Tape: USG Sheetrock Joint Tape
   3. All material for fire rated assembly shall conform to UL Design requirements.

C. All adhesives: As recommended by the manufacturer.

D. Finishing Accessories:
   1. Casing Bead: No. 200A Steel Series.
   4. Expansion Control: USG 093 in strict accord with manufacturer's instructions.
   5. Miscellaneous closure members, wall molds, edge strips, where as shown on drawings or required to be equivalent to "Fry Reglet Corp."

E. Fasteners: Conforming to ASTM C1002. USG 1 inch Super-Tite Drillers for one layer of 5/8 inch gypsum board. 1-5/8 inch Super-Tite Drillers for two layers.
F. Gaskets:
   1. To be polyurethane foam tape 1/8 inch thick x 2 inches wide continuous at all ceilings where gypsum partitions abut the ceiling or other materials as may be encountered.
   2. To be polyurethane foam tape 1/4 inch thick x 3/4 inch wide continuous where gypsum partitions abut exterior wall.

PART 3 EXECUTION

3.01 EXAMINATION

   A. Verify that site conditions are ready to receive work.
   B. Verify that rough-in utilities are in proper location.
   C. Verify that building components are ready to receive work.
   D. Beginning of installation means acceptance of substrate.

3.02 INTERIOR STEEL STUD WALL INSTALLATION

   A. Refer to Article 3.14, Schedule – Wall, Ceiling and Column Types, for type of wall construction.
   B. Refer to Drawings for indication of partitions extending through the ceiling to the structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Provide extended leg ceiling runners.
   C. Align all partitions accurately as shown on the drawings. Shape floor and ceiling runners as detailed on the drawings.
   D. Attach steel runners at floor and ceiling to structural elements with suitable fasteners located 2 inches from each end and spaced 24 inches o.c.
   E. Provide extended leg ceiling runners where occur under structural members. Allow 1/2 inch deflection allowance.
   F. Embed floor runner in two continuous beads parallel with runner. Anchor runner 24 inches o.c. maximum to the floor between beads.
   G. Secure 25 gauge studs to track using USG Lock Fastener Tool. Secure 20 gauge studs to tracks with low profile screws.
   H. Stud splicing permissible. Splice studs with 8 inch minimum nested lap, secure each stud flange with flush head screw.
   I. Construct corners using minimum three studs.
   J. Double studs at wall openings, door, window jambs, and borrowed light frames, and not more than 2 inches each side of openings. Provide headers at opening to support all applicable loads.
   K. Over openings, place horizontally a cut-to-length section of runner, with a web-flange bend at each end, and secure to strut-studs with two screws in each bent web.
L. Where drywall type door frames occur (Section 081000) rough opening shall be of correct dimensions in accordance with approved door frame shop drawings.

M. Brace stud framing system and make rigid.

N. Coordinate erection of studs with requirements of door and window frame supports and attachments.

O. Align stud web openings with adjacent studs.

P. Coordinate installation of bucks, anchors, and blocking with electrical and mechanical work to be placed in or behind stud framing.

Q. Blocking: Secure wood blocking to studs. Install blocking for anchorage of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories and hardware including wall mounted door stops.

R. Coordinate placement of insulation in stud spaces made inaccessible after stud framing erection.

3.03 WALL FURRING INSTALLATION

A. Erect wall furring for direct attachment to concrete block walls.

B. Erect furring channels horizontally. Secure in place on alternate channel flanges at maximum 24” o.c.

C. Secure in place on alternate channel flanges at maximum 24 inches o.c.

D. Space furring channels maximum 16 inches o.c.

3.04 CEILING ERECTION SYSTEM

A. Attach 3-5/8 inch steel studs (or other as required) by inserting in 3 inch steel stud runners which are attached to adjacent masonry or steel stud walls. Attach with 2 pan head screws.

B. Install 1-5/8 inch stud cross bracing over ceiling framing, space at 48 inches o.c. and attach with 2 screws at each member.

C. At hangers, install 12 inch long stud section for box reinforcing (or lap studs 12 inches minimum). Secure each end with 2 screws.

D. Hangers: Minimum 9 gauge wire.

E. Contractor may elect to use 1-1/2 inch structural plaster channels with cross framing in lieu of studs. Conform to USG requirements for secure anchorage and support.

F. Screw attach gypsum board at ceiling framing.

3.05 CEILING FURRDOWNS AND SOFFIT SYSTEM

A. Attach 6 inch steel studs (or other as required) by inserting in 6 inch steel stud runners which are attached to adjacent masonry or steel stud walls. Attach with 2 pan head screws.
B. Install 1 5/8 inch stud cross bracing over ceiling framing; space at 48 inches o.c. and attached with 2 screws at each member.

C. At hangers, install 12 inch long stud section for box reinforcing (or lap studs 12 inches minimum). Secure each end with 2 screws.

D. Hangers: Minimum 9 gauge wire.

E. Contractor may elect to use 1 ½ inch structural plaster channels with cross framing in lieu of studs. Conform to USG requirements for secure anchorage and support.

F. Screw attach gypsum board at ceiling framing.

3.06 INSULATION INSTALLATION

A. Refer to drawings and Article 3.14, Schedule – Wall, Ceiling and Column Types, for location of wall or ceiling insulation.

B. Sound Attenuation Fire Blanket Installation (Interior Walls): Install Sound Attenuation Fire Blankets after gypsum panels are applied to one side of studs and before panels are applied to other side of studs. Insert the 16 inch wide blanket in the stud cavity, by bowing the blanket slightly. After inserting, make a vertical cut between the studs. Slit the blanket with a sharp utility or hookbill knife to ease the pressure of the blanket against the gypsum panels when they are installed. Butt ends of blankets closely together and fill all voids. Install blanket between all service boxes.

C. Firesafing Insulation: Install safing insulation in void or opening requiring sound or fire rated construction. Cut safing wider than opening to ensure compression fit.

3.07 GYPSUM BOARD INSTALLATION

A. Position all ends and edges of all gypsum panels over framing members, except when joints are at right angles to framing members as in perpendicular application or when end joints are back-blocked.

B. Apply gypsum panels first to the ceiling (where scheduled) and then to the vertical walls. Extend ceiling board into corners and make firm contact with top plate. To minimize end joints, use panels of maximum practical lengths. Fit ends and edges closely, but not forced together. Stagger end joints in successive courses with joints on opposite sides of a partition placed on different studs.

C. Install gypsum board vertically in full sheets where possible. No short patch or scrap pieces will be permitted. Keep joints to a minimum. All joints must occur over a support. Avoid screw heads projecting outward thereby forcing misalignment or waves in gypsum surface.

D. Cut gypsum panels a minimum 1/4 inch shorter than the height required with 1/4 inch gap at floor for acoustical caulking. Use 1/4 inch thick shims at the floor to support panels until all screws are installed.

E. Attach panels to framing supports (Power Driven USG Screws). Space fasteners not less than 3/8 inch from edges and ends of panels and drive as recommended for specified fastening method. Drive fasteners in field of panels first, working toward ends and edges. Hold panel in firm contact with framing while driving fasteners. Drive fastener heads slightly below surface of gypsum panels in a uniform dimple without breaking face paper.
F. Cut ends, edges, scribe or make cutouts within field of panels in a workmanlike manner.

G. Trim Members:
1. Install casing beads where gypsum board abuts dissimilar materials.
2. Install corner beads on all exterior corners.
3. Tape all interior corners.
4. Tape joints and finish where new gypsum partitions abut or appear as a continuation of existing gypsum partitions.
5. Install expansion joints in accord with manufacturer's instructions.

H. Bind all edges abutting material other than gypsum board with casing bead.

I. Install double layers of gypsum board where required and shown on the drawings for the walls indicated in full accord with the manufacturer's instructions.

J. Caulk floor, wall and ceiling perimeter as required to fire and acoustical requirements with acoustical caulking.

3.08 JOINT TREATMENT APPLICATION (INTERIOR)

A. Align all partitions accurately as shown on the drawings. Shape floor and ceiling runners as detailed on the drawings.

B. Install J-Runners to structural members with the short leg toward finish side of wall with power driven fasteners at 16 inches o.c. maximum. Embed runner in a continuous bead of caulking.

C. Cut liner panels 1 inch less than floor-to-ceiling height and erect vertically between J-Runners. Where shaft walls exceed minimum available panel height, position liner panel end joints with upper and lower third points of wall. Stagger joints top and bottom in adjacent panels and reinforce end joints with horizontal C-H stud. Screw attach studs to runners on walls over 16 ft. high.

D. Use steel C-H studs 3/8 inch to not more than ½ less than floor-to-ceiling height, and install between liner panels with liner inserted in the groove. Install full-length steel E-Studs or J-Runners vertically at T-intersections, corners, door jambs, and columns. Install full-length E-Studs over gypsum liner panels both sides of closure panels. Frame openings cut within a liner panel with J-Runner around perimeter. For openings, frame with vertical E-Stud or J-Runner at edges, horizontal J-Runner at head and sill, and reinforcing as shown on the drawings. Suitably frame all openings to maintain structural support for wall.

E. For 1 Hr Rates Shaftwall:
1. Erect 5/8 inch Firecode “C” gypsum board on corridor side. Fasten to studs and runners with 1 inch Type S screws 12 inches o.c. Caulk full perimeter including all openings.

F. For 2 Hr Rated Shaftwall:
1. Erect first layer of 1/2 inch Firecode “C” gypsum board vertically and attach to studs and runners with 1 inch Type S screws at 12 inches o.c. Caulk full perimeter including all openings.
2. Apply second layer of 1/2 inch Firecode “C” gypsum board vertically over base layer with joints staggered and attach with 1-5/8 inch Type S screws staggered from those in base, spaced 12 inches o.c. and driven into studs and runners. Caulk full perimeter including all openings.
G. Where both sides of shaftwall are finished, apply 1/2 inch Firecode “C” vertically over both sides of studs with staggered joints and attach with 1 inch Type S screws at 12 inches o.c. Caulk full perimeter.

3.09 JOINT TREATMENT APPLICATION (INTERIOR)

A. Mix joint compound in strict accordance with manufacturer’s instructions.

B. Apply taping and embedding compound in a thin uniform layer to all joints and angles to be reinforced. Immediately apply sheetrock joint tape centered over joint and seated into compound. Follow immediately with a thin skim coat to embed tape, but not to function as a second coat. Fold and embed tape properly in all interior angles to provide a true angle. The tape or embedding coat must be thoroughly dry prior to application of second coat.

C. Apply second coat of joint compound over embedding coat filling panel taper flush with surface cover tape and feather out at least 2 inches beyond first coat. On joints with no taper, cover tape and feather out at least 4 inches on either side of tape. Allow second coat to dry thoroughly prior to application of finish coat.

D. Sand thoroughly and spread finish coat evenly over and extend at least 2 inches beyond second coat on all joints and feather to a smooth uniform finish. Over tapered edges, do not allow finished joint to protrude beyond plane of the surface. Apply a finish coat to cover tape. Apply taping compound at all taped angles and provide a true angle. Sand between coats and following the final application of compound, to provide a smooth surface ready for decoration.

E. Gypsum board material above ceilings are finished and taped, fastener depressions filled however final sanding is not required.

F. Finishing Fasteners: Apply a taping, all-purpose type compound to fastener depressions as the first coat. Follow with a minimum of two additional coats of topping or all-purpose compound, leaving all depressions level with the plane of the surface.

G. Finishing Beads and Trims:
   1. Apply first coat to all bead and trim and properly feather out from ground to plane of surface. Compound must be thoroughly dry prior to application of second coat.
   2. Apply second coat in same manner as first coat, extending compound slightly beyond onto face of panel. Compound must be thoroughly dry prior to application of finish coat.
   3. Apply finish coat to all bead and trim, extending compound slightly beyond the second coat and properly feathering from ground to plane of surface. Sand finish coat as necessary to provide a flat smooth surface ready for decoration.

H. Apply “Surface Sealer” equal to that manufactured by USG to all gypsum surfaces within toilet room and/or wet locations. Apply sealer in accord with manufacturer's direction, after taping and finishing of all joints.

3.10 INSTALLATION OF SECURITY BARRIER MESH

A. Where indicated on drawings, install security barrier mesh behind gypsum board. Secure mesh to steel stud framing with No. 12 self drilling screws with washers.
   1. Space screws at 16 inches o.c. max. each way.
   2. Lap adjacent mesh panels a minimum of 3 inches on all sides.
3.11 EXISTING GYPBOARD WALLS AND CEILINGS

A. Walls: Patch and repair all interior gypsum board walls as noted on drawings or disturbed by this contract to match existing construction.

B. Ceiling: Patch and repair all existing interior and/or exterior gypsum board ceilings noted on drawings or disturbed by this contract. To match existing construction using 5/8 inch gypsum board. Use USG Exterior gypsum board for exterior or moisture related applications.

3.12 TOLERANCES

A. Maximum variation from true flatness 1/8 inch in 10 feet in any direction.

B. Maximum variation of any member from plane: 1/8 inch.

3.13 CLEANING

A. Clean soiled or discolored surfaces after installation.

B. Touch up scratches, abrasions, voids and other defects in gypsum surfaces.

C. Remove and replace damaged or improperly installed material and protect for painting. Reference Section 099000.

D. Remove all debris from work site and clean up all residue from this work.

3.14 SCHEDULE – WALL, CEILING AND COLUMN TYPES

A. Reference Drawings for the following types:
   1. Partitions extending with gypsum both sides to deck.
   2. Partitions (studs to deck) with gypsum board stopping above ceiling.
   4. Partitions of fire rated construction in accord with rating required.
   5. Partition with acoustical performance requirements.

B. Sound Integrity:
   1. The sound transmission integrity of these partitions must be maintained as a minimum average as schedules.
   2. Caulk entire perimeter of partition units. Completely seal all cracks. No openings may remain through walls.
   3. Seal with caulking all service boxes (electric, etc.) which penetrate either face of wall. Do not back electric outlets to electric outlets.

C. Wall and Ceiling Types:
   1. Type W-1 – Typical Wall Assembly (interior non-fire rated walls that extend to bottom of ceilings). To be one (1) layer of 5/8” Firecode gypsum board each side of a 3 5/8” 25 gauge steel stud at 16” o.c. maximum or other stud widths as shown on the drawings. Partitions to extend from floor to ceiling above with all joints finished, gypsum board screw attached and caulked full perimeter at all openings. Provide top of partition clip fasterner to ceiling suspension system at all intersecting walls with grid locations. In addition, provide seismic lateral bracing as required to meet IBC Building Code requirements. Provide 3 ½” sound batt insulation full height of partition. 47 STC minimum sound rating. Provide mold resistant glass-mat gypsum board and/or gypsum glass mat tile backerboard at locations as required.
2. Type W-2 – (interior non-fire rated walls that extend 4" above ceiling). To be one (1) layer of 5/8" Firecode gypsum board each side of a 3 5/8" 25 gauge steel stud at 16" o.c. maximum or other stud widths as shown on the drawings. Studs to extend from floor slab to underside of floor deck above, gypsum board to extend 4" minimum above ceiling. All joints finished, gypsum board screw attached and caulked full perimeter at all openings. Provide 3 1/2" sound batt insulation full height to 4" above ceiling 47 STC minimum sound rating. Provide mold resistant glass mat gypsum board and/or gypsum glass mat tile backerboard at locations as required.

3. Type W-3 – (interior non-fire rated walls that extend to deck above): To be one (1) layer of 5/8 inch Firecode gypsum board each side of a 3-5/8 inch 25 gauge steel stud at 16" o.c. maximum or other stud widths as shown on the drawings. Partitions to extend from floor slab to deck above with all joints finished, gypsum board screw attached, and caulked full perimeter and at openings. Provide 3 ½" sound batt full height of partition where shown on drawings. 47 STC minimum sound rating.

4. Type W-4 – (Interior one (1) hour fire rated wall assembly): To be one (1) layer of 5/8 inch Firecode gypsum board each side of a 3-5/8 inch 25 gauge steel stud at 16" o.c. maximum or other stud widths as shown on the drawings with 2 inch fire safing batt full height of partition for a 1 Hr. UL-465 fire rated separation assembly. Partitions to extend from floor slab to deck above with all joints finished, gypsum board screw attached, and full perimeter caulked including all openings. Requires special construction for wall penetrations (outlets, etc.).

5. Type W-5 – (interior two (2) hour rated wall assembly): To be two (2) layers of 5/8 inch Firecode gypsum board each side of a 3-5/8 inch 25 gauge steel stud at 16" o.c. maximum or other stud widths as shown on the drawings with 2 inch fire safing batt full height of partition for a 2 Hr. UL-U412 fire rated separation assembly. Partitions to extend from floor slab to deck above with all joints finished, gypsum board screw attached, and full perimeter caulked including all openings. Requires special construction for wall penetrations (outlets, etc.). STC 55 minimum Sound rating.

6. Type W-6 – (interior two (2) hour fire rated shaftwall assembly): To be two (2) layers of 5/8" firecode gypsum board one side with one (1) inch gypsum liner panel on opposite side set within USG steel C-H Studs 24" o.c. full height of partition for a 2 Hour UL-U438 fire rated separation assembly. Panels applied vertical and screw attached, joints finished (fire tested both sides). Requires special construction for wall penetrations (outlets, etc.) STC 39 minimum sound rating.

7. Type W-7 – (interior non-fire rated chase walls): To be one (1) layer of 5/8 inch Firecode gypsum board each side of a 3-5/8 inch 25 gauge steel stud at 16" o.c. in two (2) rows or other stud widths as shown on the drawings. Partitions to extend from floor slab to deck above with all joints finished, gypsum board screw attached, and caulked full perimeter and at openings. Provide 3 ½" sound batt full height of partition where shown on drawings. 45 STC minimum sound rating.

8. Type W-8 – Wall Furring: To be one (1) layer of 5/8 inch Firecode gypsum board on 7/8 inch metal hat channels spaced 16 inches o.c. vertically or horizontally attached to concrete or concrete block back-up. Gypsum board to extend a minimum of 4 inches above finish ceiling.

9. Type C-1 – Typical Non-Rated Ceiling Assembly: To be one (1) layer of 5/8 inch Gypsum Board applied at right angles to 7/8" rigid furring channels at 16 inches o.c. with 1" Type S drywall screws at 12" o.c. Furring channels are applied at right angles to 1-1/2 inch rigid carrying channels at 48 inches o.c. Attach carrying channels with 8 gauge hanger wire to structure.

10. The above wall and ceiling types may not be inclusive of all wall construction to be encountered. The Contractor is to furnish and install all walls whether or not specified herein complete with all accessories without additional cost to the Owner.

END OF SECTION
PART 1  GENERAL

1.01  SECTION INCLUDES

A. Scope of Work: Provide tile, tile installation materials and accessories as indicated on drawings and as specified herein and as needed for the complete and proper installation.

B. Tile floor and trim units.

C. Wall tile and trim units.

D. Thresholds.

E. Installation Products, adhesives, mortars, grouts and sealants.

F. Waterproof membranes for tile where indicated.

G. Sound Control Underlayment and Crack Suppression Membrane where indicated.

H. Trim, cementitious backer units and other accessories specified herein.

1.02  REFERENCE STANDARDS


E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive; 2009 (Revised).


N. ANSI A118.1 - American National Standard Specifications for Dry-Set Cement Mortar; 2012 (Revised).
P. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar; 2012 (Revised).
Q. ANSI A118.5 - American National Standard Specifications for Chemical Resistant Furan Mortars and Grouts for Tile Installation; 1999 (Reaffirmed 2010).
AH. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.
1.03 DEFINITIONS

A. The term "ceramic tile" means "glazed ceramic wall tile" or "ceramic mosaic tile."
   1. The term "tile" means "ceramic tile," "quarry tile," "paver tile," or "porcelain tile."
   2. The term "Wet areas" refers to shower rooms and other areas with similar usages and
does not refer to toilet rooms or other such areas where wetness is seldom encountered.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of
this section; require attendance by all affected installers.

1.05 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories.
Include instructions for using grouts and adhesives.
C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions
with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and
setting details.
D. Samples: Mount tile and apply grout on two plywood panels, minimum 18 x 18 inches in size
illustrating pattern, color variations, and grout joint size variations if requested by Architect.
E. Certification: Prior to installation of flooring, submit written certification by flooring subcontractor
that condition of the sub-floor is acceptable.
F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements,
including certification that floor tile meets or exceeds the requirements of ANSI A137.1 for a
minimum wet DCOF AcuTest value of 0.42.
G. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal
methods, and polishes and waxes.
H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Furnish extra tile of each color, pattern and finish at the rate of 1 sq. ft. of tile for each 100
      sq. ft. Provide extra base of each color, pattern and finish at the rate of one tile per 10
      lineal feet of wall/floor tile.
   3. Deliver maintenance materials in sealed cartons listing the manufacturer's name, product,
      color, pattern and other pertinent information clearly marked thereon.

1.06 QUALITY ASSURANCE

A. Source of Materials: Provide materials obtained from one source for each type and color of tile,
grout, and setting materials.
B. Installer Qualifications: Company specializing in performing tile installation, with minimum of 5
   years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.
B. Packing and Shipping:
   1. Deliver materials to project site in manufacturer's original unopened containers with
      manufacturer's name, brand name, grade, TCA seal of quality, color, pattern and other
      pertinent information clearly marked thereon.
   2. Tile Cartons: Grade sealed by manufacturer in accordance with ANSI A137.1.
   3. Deliver dry-set mortar and grout and prepared Portland cement mortar and grout, in
sealed, moisture-proof, containers.
4. Deliver latex mortar and grout additives and organic adhesives in sealed containers.

C. Storage and Protection:
1. Store materials in their original containers, clear of ground and under cover in a manner that will prevent damage and staining.

1.08 EXTRA MATERIAL

A. Furnish under provisions of Section 017000.

B. Supply to the Owner in clean marked cartons a supply of each type of tile equivalent to 2 percent of total quantity of each color.

PART 2 PRODUCTS

2.01 TILE

A. Tile Manufacturer
1. Crossville, Inc.
349 Sweeney Drive
Crossville, TN 38555
Voice: (931) 484-2110

B. Floor Tile (FT-1)
1. Tile/Collection: Empire
2. Sizes:
 a. 12” x 12” x 3/8” nominal
 b. 12” x 24” x 3/8” nominal
 c. 24” x 24” x 3/8” nominal
3. Floor Tile to meet or exceed ANSI A137.1 for a minimum wet DCOF AcuTest value of 0.42.
4. Finish: Thru-Color, rectified
5. Color/Pattern: General’s Grey VS85 (Unpolished)
6. Special Shapes: as required and indicated on drawings.
7. See Drawings for pattern layout.

C. Base Tile (BT-1)
1. Tile/Collection: Empire
2. Size 6” x 12” cove base
3. Finish: Thru-Color, rectified
4. Color/Pattern: General’s Grey VS85 (Unpolished)
5. Special Shapes: as required and indicated on drawings.
6. See Drawings for pattern layout.

D. Wall Tile (WT-1)
1. Tile/Collection: Color by Numbers
2. Size: 4” x 12”
3. Finish: Thru-color, rectified
4. Color/Pattern: A Perfect Ten - Satin
5. Trim shapes: as required and indicated on drawings
6. See Drawings for pattern layout.

E. Wall Tile (WT-2)
1. Tile/Collection: Laminam 3+
2. Sizes: See drawings for sizes
3. Finish: Thru-color, rectified
4. Color/Pattern: Oxide Nero L1461
5. Special shapes: as required and indicated on drawings
6. See Drawings for pattern layout.
2.02 THRESHOLDS
A. Thresholds: Marble, white, honed finish; 2 inches wide by full width of wall or frame opening; 1/2 inch thick; beveled one long edge with radius corners on top side; without holes, cracks, or open seams.
   1. Applications: Provide at the following locations:
      a. At doorways where tile terminates.
      b. At open edges of floor tile where adjacent finish is a different height.

2.03 SETTING MATERIALS
A. Provide setting materials made by the same manufacturer as grout.
B. Latex-Portland Cement Bond Coat: ANSI A118.4 and the following requirements for composition:
   1. Prepackaged dry mortar mix incorporating dry polymer additive in the form of a re-emulsifiable powder to which only water is added at job site.
   2. Application(s): Use this type of bond coat where indicated and where no other type of bond coat is indicated.
   3. Products:
      d. Substitutions: See Section 016000 - Product Requirements.
   1. Dry-set Portland cement mortar, factory sanded and meeting the requirements of ANSI A118.1-1988 and Tile Council of America Formula 759.
   2. Products:
      c. Substitutions: See Section 016000 - Product Requirements.

2.04 GROUTS
A. Laticrete Spectralock Pro
B. Color: #45 Raven

2.05 MANUFACTURER AND MATERIAL – WATERPROOF MEMBRANE
A. Waterproofing material shall be LATICRETE 9235 Liquid Applied Waterproof Membrane with reinforcing fabric as manufactured by LATICRETE International, Inc.

2.06 TILE EDGE PROTECTION
A. Acceptable Manufacturer: Schluter Systems, L.P., 194 Pleasant Ridge Road, Plattsburgh, NY 12901-5841. ASD. Tel: (800) 472-4588. Fax (800) 477-9783. E-mail: specassist@schluter.com. Web: www.schluter.ca.
B. Requests for substitutions will be considered in accordance with provisions of Section 01 6000
C. Schluter-RONDEC - Model Number RO100AE – 3/8”
   1. Description: profile with rounded visible surface, integrated trapezoid-perforated anchoring leg, and integrated grout joint spacer.
   2. Material and Finish:
      a. AE – Satin Anodized Aluminum
         1) As required to coordinate with tile selection and setting system selected.

2.07 THIN-SET ACCESSORY MATERIALS
A. Primer-Sealer: As recommended by the manufacturer of the organic adhesive used.
PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

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

3.02 PREPARATION

A. Examine the conditions under which the work of this section will be performed.

B. Verify that the concrete floor slabs are within the tolerances specified.

C. If the concrete floor slabs are not within the specified tolerances, notify the Architect and employ a leveler coat recommended by the manufacturer to achieve the required tolerances. Apply the leveler coat as recommended by the manufacturer. Do not exceed maximum allowable thickness. If necessary, grind down high spots.

D. Determine that the floor slab and leveler coat, if used, are adequately cured and dry by performing moisture content tests recommended by the tile and adhesive manufacturers. Do not rely on visual examination to determine acceptable dryness or moisture content.

E. Clean the surface of the concrete floor slab and remove the following:
   1. Dirt, dust and debris;
   2. Laitance and liquid membrane-forming curing compounds;
   3. Wax, grease, oil or other contaminants which might interfere with the adhesive bond.
   4. If the surface of the concrete floor slab is glossy or if recommended by the adhesive manufacturer, dull or mechanically etch the surface.

F. Lay-out tile work in advance to determine the location and size of cuts. Generally, start at the center of the space, discounting minor offsets. Adjust location of starting center so that cut pieces will not be less than \( \frac{1}{2} \) a tile width.

3.03 INSTALLATION

A. Waterproofing:
   1. Install waterproofing membrane in compliance with current revisions of ANSI A108.01 and ANSI 108.13. Review the installation and plan the application sequence per manufacturer’s recommendations.
   2. Pre-treat all substrate cracks, cold-joints, control joints, coves, corners and penetrations according to manufacturer’s specific recommendations. Allow pre-treated areas to dry to the touch.
   3. Apply a liberal coat of waterproofing membrane with brush or roller over substrate including pre-treated areas and allow to dry to touch.
   4. Apply another liberal coat of waterproofing membrane over all areas to seal. When last coat has dried to the touch, inspect final surface for pinholes, voids or thin spots. Use additional waterproofing membrane to seal all defects.
   5. Allow waterproofing membrane to cure for seven (7) days minimum at 70°F and 50% RH before performing water penetration tests as recommended per specific manufacturer.

B. Sound and Crack Isolation Mat
   1. Install a perimeter isolation strip before placing and trimming the Sound & Crack Isolation Mat per specific manufacturer’s recommendations.
2. Adhere the Sound & Crack Isolation Mat to the Concrete Area substrate. Concrete shall be in place for 28 days (minimum) and shall be dry. The surface shall have a smooth finish and be free of voids, sharp protrusions and loose aggregate. All surfaces should be between 40°F (4°C) and 90°F (32°C) and structurally sound, clean and free of all dirt, oil, grease, paint, concrete sealers or curing compounds and cement laitance. Rough or uneven concrete surfaces should be made smooth with a LATICRETE Latex Portland cement underlayment to provide a wood float or better finish.

3. Use a ¼" x ¼" notched trowel and comb mortar over substrate, apply only enough Sound & Crack Isolation Mat into place, in the thin set adhesive mortar. Once installed, use a 25-45 lbs (11.3-20kg) roller to embed the Sound & Crack Isolation Mat firmly into the thin set adhesive mortar. Allow to cure per instructions on this set adhesive package. Install Sound & Crack Isolation Mat over the area to be treated, do not overlap edges but be sure edges of each piece butt firmly together. Trim length of mat to desired length and width. Once fully cured, install porcelain tile directly over the Sound & Crack Isolation Mat per specific manufacturer’s recommendations.

C. Tile Placement:
1. Mix the adhesive as recommended by the manufacturer using the appropriate tools and the admixture herein specified in lieu of water. Ensure that the adhesive is not over or under mixed.
2. Spread the adhesive herein specified using the method and notched trowel recommended by the manufacturer in order to obtain maximum contact between substrate, tile and adhesive without gaps, air-pockets or honeycombs.
3. Do not spread the adhesive too far in advance of tile placement and do not place tile in adhesive which has begun to cure.
4. Place tiles in adhesive and push or tamp into position with a rubber-headed mallet or similar tool. Ensure that contact between tile and adhesive is complete and solid.

D. Grouting:
1. Allow the adhesive to cure properly as recommended by the manufacturer but allow to cure for at least 24 hours.
2. Mix the grout as recommended by the manufacturer using the appropriate tools and the admixture herein specified in lieu of water. Ensure that the grout is not over or under mixed.
3. Spread the grout using the method and tool recommended by the manufacturer. Use an adequate quantity of grout and work so that the joints are completely filled without gaps, air-pockets or honeycombs.
4. Allow the grout to take initial set and then remove as much residue as possible without using any chemicals.
5. Allow the grout to set for at least 24 but not more than 48 hours and then remove the remaining residue using the materials herein specified.

E. Expansion and Control Joints:
1. Provide control or expansion joints as located in contract drawings and in full conformity, especially in width and depth, with architectural details.
   a. Substrate joints must carry through, full width, to surface of tile, brick or stone.
   b. Install expansion joints in tile, brick or stone work over construction/cold joints or control joints in substrates.
   c. Install expansion joints where tile, brick or stone abut restraining surfaces (such as perimeter walls, curbs, columns), changes in plane and corners.
   d. Joint width and spacing depends on application-follow TCNA “Handbook for Ceramic Tile Installation” Detail “EJ-171 Expansion Joints” or consult sealant manufacturer for recommendation based on project parameters.
   e. Joint width: ≥1/8” and ≤1”.
   f. Joint width: depth~2:1 but joint depth must be ≥1/8” and ≤1/2”.
   g. Layout (field defined by joints): 1:1 length: width is optimum but must be ≤2:1.
Remove all contaminants and foreign material from joint spaces/surfaces, such as dirt,
dust, oil, water, frost, setting/grouting materials, sealers and old sealant/backer. Install appropriate Backing Material. Apply masking tape to face of tile, brick or stone veneer. Use caulking gun, or other applicator, to completely fill joints with sealant. Within 5-10 minutes of filling joint, ‘tool’ sealant surface to a smooth finish. Remove masking tape immediately after tooling joint. Wipe smears or excess sealant off the face of non-glazed tile, brick, stone or other absorptive surfaces immediately.

3.04 PROTECTION

A. Upon completion of the work, ensure through the use of adequate coverings such as tarpaulins or heavy Visqueen that the completed work will not be damaged or soiled by workmen or subcontractors whose work follows the tile work or by workmen that will use the area for any purpose.

B. Prohibit traffic of any type on newly tiled and grouted floors at least 48 hours after completion.

3.05 CLEANING

A. Comply with the pertinent provision of Section 01 7000.

B. Prior to final acceptance by the Owner, completely clean the ceramic tile and joints. Remove any accumulated dust, dirt and stains.

3.06 EXTRA MATERIALS

A. Tiles: 4 boxes or cartons;

B. Base: 4 boxes or cartons;

C. Adhesive: 5 gallons or enough bag material to produce 5 gallons;

D. Grout: 5 gallons or enough bag material to produce 5 gallons; and

E. Admixture: 2 gallons.

END OF SECTION
PART 1 GENERAL

1.01 SCOPE OF WORK

A. The furnishing of and paying for all labor, material, services, appliances and equipment necessary for execution, installation and completion of all work specified herein and as shown on drawings.

B. Section includes:
   1. Lay-in acoustical type ceiling tile board including installation complete with suspension system, grid, hangers, etc.
   2. Required metal molding, edge strips, hangers, screws, rivets, etc., required to complete the installation of all above.

1.02 REFERENCES


E. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2014.

F. CHPS (HPPD) - High Performance Products Database; Current Edition at www.chps.net/.

G. GEI (SCH) - GREENGUARD "Children and Schools" Certified Products; GREENGUARD Environmental Institute; current listings at www.greenguard.org.

H. ITS (DIR) - Directory of Listed Products; current edition.


1.03 SUBMITTALS

A. Submit under provisions of Section 013000.

B. Product Data: Provide data on metal grid system components and acoustic units.

C. Samples:
   1. 12 inch x 12 inch samples of each new acoustical unit to be used, matched or replaced.
2. Submit sample of suspension system, main tees and cross tees, and hold down clips.

1.04 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 017200.

B. Submittals

1.05 QUALIFICATIONS

A. Grid Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum five years' experience.

B. Acoustical Unit Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.

C. Installer: Company specializing in performing the work of this section with a minimum of three years' documented experience.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 016000.

B. Deliver materials in original, unopened, protective packaging, with manufacturer's labels indicating brand name, pattern, size, thickness and fire rating as applicable, legible and intact.

C. Store materials in original protective packaging to prevent warping, soiling, physical damage or wetting.

D. Store cartons open at each end to stabilize moisture content and temperature.

E. Do not begin installation until sufficient materials to complete a room are received.

F. Ceiling material storage time at the job site should be as short as possible and environmental conditions should be as near as possible to those specified for occupancy.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Before ceiling material is installed, units (panels of tile) shall reach room temperature and have a stabilized moisture content. Do not install in spaces where temperature or humidity conditions vary greatly from temperatures and conditions that will be normal in the occupied space.

B. Acoustical materials are interior finish products and are designed for installation within the normal expected occupancy range of 60 to 85 degrees F. Relative humidity should be no more than 70 percent. All plastering, concrete, terrazzo, or any other wet work should be complete and dry. All windows and doors should be in place. The heating, ventilating, and air-conditioning systems shall be installed and operable where necessary to maintain proper temperatures before, during, and after installation of acoustical materials.

1.08 SCHEDULING

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
B. Install acoustical units after interior wet work is dry.

1.09 EXTRA MATERIALS

A. Furnish under provisions of Section 017000.

B. Provide in full carton lots a minimum of 12 pieces of each type Acoustic Tile used for the Owner's use, in undamaged and marked cartons. These shall not be used for replacement as stipulated in Article 3.05 herein for final acceptance.

PART 2 PRODUCTS

2.01 MANUFACTURERS - SUSPENSION SYSTEM

A. Armstrong World Industries.

2.02 SUSPENSION SYSTEM MATERIAL

A. Grid Type 1:
   1. Non-fire Rated Prelude XL Grid: ASTM C635, exposed T; components die cut and interlocking.
   2. Grid Materials: Commercial quality cold rolled steel with galvanized coating.
   3. Exposed Grid Surface Width: 15/16 inch.
   4. Grid Finish: Blizzard White

B. Accessories: Clips, splices, edge moldings, hold down clips required for suspended grid system.

C. Hanger Wire: 12 gauge annealed galvanized. Uncoil and stretch before use.

D. Tie Wire: 18 gauge soft annealed. Uncoil and stretch before using.

2.03 MANUFACTURER - ACOUSTICAL UNITS

A. Armstrong World Industries.

2.04 ACOUSTIC UNITS MATERIAL

A. Acoustical Panels - (Type ACT-1) To be equivalent to Armstrong “Ultima” Square Edge, Fine Texture (#1910) 24”x 24” x 3/4” mineral fiber, white, square edge lay-in indicated as ACT-1 on the Drawings. Total acoustics NRC .75 CAC 35. Use with type 1 suspension system above.

2.05 ACCESSORIES

A. Adhesives (Where required): Adhesives to be as recommended by the manufacturer for the exact application encountered.

B. Touch-up Paint: Type and color to match acoustical and grid unit.

C. Provide top of partition clip fasteners to ceiling suspension system at all intersecting walls with grid locations for walls that terminate at ceilings. Equivalent to Armstrong UPC Partition Clip. In addition, provide seismic lateral bracing as required to meet IBC Building Code requirements.
PART 3  EXECUTION

3.01  EXAMINATION

A. Verify site conditions under provisions of Section 013900.

B. Cooperate with all other subcontractors, particularly electrical, mechanical and sprinkler, in working to and locating their fixtures, grilles, heads, etc. Header around all such openings with tees or edge mould as required, to form proper grid opening for all items.

C. Verify that layout of hangers will not interfere with other work.

D. Provide all protection of adjacent material required by this operation and remove at completion.

3.02  INSTALLATION - LAY-IN GRID SUSPENSION SYSTEM

A. Ceiling suspension system shall be installed level using the "laser" method to the heights as scheduled or shown on drawings.

B. Install suspension system in accordance with manufacturer's instructions and as supplemented in this section including seismic bracing as required by the International Building Code (IBC).

C. Install system capable of supporting imposed loads to a deflection of 1/360 maximum.

D. Locate system on room axis according to reflected plan.

E. Install after major above ceiling work is complete. Coordinate the location of hangers with other work.

F. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

G. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

H. Do not support components on main runners or cross runners; support components independently as follows:
   1. Fixtures at ceiling: Provide additional hanger wires independent of ceiling support system to support light fixtures, heating diffusers, heating grilles, and audio speakers, either surface mounted or lay-in type.
   2. Lighting fixtures are to be secured in grid per NFPA requirements.
   3. Ceiling grid is to be supported and braced in full accord with International Building Code Seismic Requirements.
   4. Support required for items 3.02.H.1, 2 and 3 to be provided by section 095100 contractor.

I. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions.

3.03  INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
C. Lay directional patterned units one way with pattern parallel to shortest room axis. Fit border trim neatly against abutting surfaces.

D. Install units after above ceiling work is complete.

E. Install acoustical units level, in uniform plane, and free from twist, warp and dents.

F. Cut panels to fit irregular grid and perimeter edge trim.

3.04 ERECTION TOLERANCES

A. Maximum variation from flat and level surface: 1/8 inch in 10 feet.

3.05 REPLACEMENT

A. Before final acceptance, this contractor will be required to replace all soiled or damaged units and/or panels of all work specified herein.

3.06 CLEANING

A. Clean soiled or discolored unit surfaces after installation.

B. Touch up scratches, abrasions, voids, and other defects in painted surfaces.

C. Remove and replace damaged or improperly installed units.

D. Remove all equipment and excess material and have premise clean of all debris.

END OF SECTION
PART 1  GENERAL

1.01  RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02  SUMMARY

A. This Section includes the following:
   1. Maximum Grade 4 security double skin plank type acoustical ceiling system.

1.03  REFERENCES

A. ASTM A 1008/A 1008M-00, Specification for Steel, Sheet and Strip, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Formability

B. ASTM A 1011/A 1011M-00, Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Formability

C. ASTM A 653/A 653M-97, Specification for Steel Sheet, Zinc-coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot Dipped Process (Commercial Steel)

D. ASTM A 666-96b, Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar

E. ASTM B 117-97, Standard Practice for Operating Salt Spray (Fog) Apparatus

F. ASTM D 610-95, Standard Test Method for Evaluating Degree of Rusting on Painted Steel Surfaces


J. ASTM C 636-03, Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels

K. ASTM C 423, Standard Test Method for Sound Absorption and Sound Absorption Coefficient by the Reverberation Room Method

L. ASTM F 2322 Standard Test Methods for Physical Assault on Vertical Fixed Barriers for Detention and Correctional Facilities


N. AWS D1.3 Structural Welding Code for Sheet Metal
1.04 SUBMITTALS

A. General: Submit the following according to Conditions of Contract and Division 1 Specification Sections.

B. Product Data: For each type of product indicated.

C. Coordination Drawings: Reflected ceiling plans drawn to scale and coordinating penetrations and ceiling-mounted items. Show the following:
   1. Joint pattern.
   2. Security ceiling system suspension assembly members.
   3. Method of attaching hangers to building structure.
   4. Size and location of initial access modules.
   5. Ceiling-mounted items including light fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.

D. Samples for Verification: For the following, prepared on Samples of size indicated below:
   1. Security Ceiling Panel Units: Full cross section by 12 inches (300 mm) long for each type of panel.
   2. Perimeter Supports, Closures, Exposed Molding: 12-inch (300-mm) long Samples of each type.
   3. Suspension System: 12-inch (300-mm) long Samples.

E. Welding certificates.

F. Qualification Data: For Installer.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers trained and approved by ceiling system manufacturer, with a minimum five years experience of successful installation of security ceilings similar in type, quantity and quality to that indicated for this project.
   1. Source Limitations: Obtain each security ceiling system through one source from a single manufacturer.

B. Welding: Qualify procedures and personnel according to the following:
   1. AWS D1.1, “Structural Welding Code—Steel.”
   4. AWS D1.6, “Structural Welding Code—Stainless Steel.”

C. Preinstallation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section “Project Management and Coordination.”

1.06 DELIVERY, STORAGE AND HANDLING

A. Store panels off the ground with one end elevated to provide drainage.
1.07 SEQUENCING AND SCHEDULING

A. Coordinate layout and installation of security ceiling systems with other construction that penetrates ceilings or is supported by them, including fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

1.08 MAINTENANCE

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Security Ceiling Panels: Full-size units equal to 2.0 percent of amount installed.
   2. Suspension System Components: Quantity of each grid and exposed component equal to 2.0 percent of amount installed.
   3. Security Fasteners: Furnish not less than 1 box for each 50 boxes or fraction thereof, of each type and size of security fastener installed.

1.09 WARRANTY

A. A ceiling systems work shall be warranted from defects in workmanship, installation and quality for a period of one (1) year from substantial completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Security Grade 4 double skin ship-lap joint plank ceiling systems as manufactured by Trussbilt under the TrussDek trade name or approved equivalent.

2.02 MATERIAL

A. Panel face sheet thicknesses shall be for 0.067 in. minimum thickness.

B. Panel face sheets shall be made of commercial quality, level, cold-rolled steel conforming to ASTM A 1008 / A 1008M CS Type B and shall have a zinc coating applied by the hot-dip process conforming to ASTM A 653/A653M Commercial Steel (CS), coating designation A40. The steel shall be free of scale, pitting, coil breaks or other surface blemishes. It shall also be free of buckles, waves or any other defects caused by the use of improperly leveled sheets.

C. For severely corrosive conditions and where specified, face sheets and components shall be stainless steel conforming to ASTM A 666, Type 304.

2.03 CONSTRUCTION

A. Double skin ship-lap joint plank ceiling system – Security Grades 4
   1. Ceiling panels: Shall be 24 in. wide and supplied in manufacturer’s standard lengths of 6 ft. 8 ft. or 10 ft. All ceiling planks shall have factory formed ship-lap edges and shall be perforated with 0.125 in. diameter holes, staggered .218 in. on center for a 29% open area.
   2. Panel core construction: Panels shall be stiffened using one of the follow core systems.
      a. Continuous steel truss design core material, .015 in. minimum, having truncated triangular sections extending continuously from one panel face to the other, spot welded to each face sheet 2.75 in. on center horizontally and 3 in. on center vertically. Core material shall extend full height and width of panel.
b. Rolled or formed 1/8 in. steel channels extending full length of panel and continuous from one face to the other, spaced not more than 4 in. on center and spot welded to panel faces not more than 3 in. on center vertically.

c. Continuous vertical hat sections, one such hat section welded to each face of the panel, .053 in., with vertical webs no more than 4 in. apart. Hat sections shall be welded to each other at least 6 in. on center on both sides in order to prevent separation.

d. Spaces between stiffeners shall be filled with fiberglass or mineral rock wool batt-type material.

3. Start and ending panels: shall be 0.093 in. minimum thickness, single skinned non-perforated material and shall be cut to size in the field by the installing contractor.

4. Wall perimeter angles: Shall be formed angles 0.123 in. minimum thickness and punched 16 in. on center for 3/8 in. expansion anchors. Panels shall be welded to the wall angles 1 in. weld 12 in. on center.

5. Interim Tee supports: Tee supports shall be two wall mounting angles bolted back-to-back using 3/8" – 16 bolts, 24 in. on center.

a. Suspension for Tee supports shall be 3/8 in galvanized threaded rod, bolted to the above structure and the Tee support, 36 in (914 mm) on center.

6. Fasteners: Any exposed fasteners shall be a minimum No.10 size, pin Torx®, tamper-proof security screws or blind rivets. Wall anchor bolts shall be 3/8 in. diameter (Rawl 5015 or equivalent) and shall be placed 16 in. on center. Anchors for securing the wall moldings to the wall shall be furnished by the ceiling manufacturer.

7. Acoustical material: The inside surface of all perforated ceiling pans shall be covered with a Class “A” poly-encapsulated fiberglass insulation of sufficient thickness and density to provide a NRC of not less than .65 when tested in accordance with ASTM C423. Acoustical fill flame spread index shall not exceed 15 with smoke developed value not exceeding 5 when tested in accordance with ASTM C84.

8. Lights, HVAC: All light and air units are to be sized to fit into and trim off to full panel width openings and shall be independently supported from above by the trade requiring the opening.

9. Finish: All components of the panel and suspension system visible from the floor side shall have a factory applied finish. Prior to painting, all surfaces shall be cleaned of rust, oil and other impurities by receiving a multi stage pre-treatment consisting of degrease and phosphate coating, clear water rinse and non-chromate sealer and rinse, to condition the surface of the metal to resist and inhibit corrosion and promote paint adhesion. Finish to be applied after perforation to ensure coating of the perforated holes. Panels shall be coated with Clay 2K High Solids Urethane primer by Four Seasons Paint (a division of Diamond Vogel Paints), applied at 1.5 mils + or – ½ mil thickness (dry).

10. Color: White

11. Provide ceiling access panels (2’x2’) where indicated on drawings. Provide detention grade cylinder lock, keyed alike for each panel. Verify exact location prior to installation.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of security ceiling systems.

1. Examine roughing-in for embedded and built-in anchors to verify actual locations of security ceiling system connections before security ceiling system installation.

2. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of security ceiling systems.
B. Inspect built-in and cast-in anchor installations before installing security ceiling systems to verify that anchor installation comply with requirements. Prepare inspection reports.
   1. Remove and replace anchors where inspections indicate that they do not comply with specified requirements. Reinspect after repairs or replacements are made.
   2. Perform additional inspections to determine compliance of replaces or additional work.
      Prepare inspection reports.

C. Verify locations and layouts of security ceiling systems with those indicated on reflected ceiling plans and approved Shop Drawings.

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

3.02 PREPARATION

A. Coordination: Furnish layouts for cast-in-place anchors, clips, and other security ceiling anchors whose installation is specified in other Sections.
   1. Furnish cast-in-place anchors and similar devices to other trades for installation well in advance of time needed for coordinating other Work.

B. Measure each security ceiling area and establish layout of security ceiling panels to balance border widths at opposite edges of each security ceiling. Avoid using less-than-half-width panels at borders and comply with layout shown on reflected ceiling plans and Coordination Drawings.

3.03 INSTALLATION

A. General: Comply with CISCA’s “Ceiling Systems Handbook.”

B. Install perimeter supports around perimeter of security ceiling area.
   1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of supports before they are installed.
   2. Attach supports with anchor bolts or expansion anchors spaces not more than 12 inches (305 mm) o.c. and not more than 3 inches (67 mm) from ends. Miter corners accurately.
      a. Level perimeter supports with suspension system to a tolerance of 1/8 inch in 12 feet (3 mm in 3.6m).
   3. Do not use exposed fasteners, including pip rivets, on moldings and trim. If exposed fasteners are unavoidable, obtain approval from Architect/Engineer for use of security fasteners.
   4. Do not attach hangers to metal deck. Attach hangers to structural members.

C. Install accessories where indicated and as required to comply with performance requirements.

D. Security-Plank Security Ceiling System Installation
   1. Install security planks with long edges continuously interlocked. Adjust security planks to final position before permanently fastening. Provide minimum 1-1/2-inch (38-mm) bearing.
      a. Install locking clips at end of single configuration panels and along sides of non-removable panel adjacent to wall angle.
      b. Attach adjacent security planks to each other with security fasteners spaced not more than 18 inches (460 mm) o.c. and not more than 6 inches (150 mm) from ends.
      c. Attach the last installed single configuration security plank to perimeter supports with security fasteners not more than 24 inches (600 mm) on center and 3 inches (75 mm) from ends of security plank. Fasten through exposed face of supports into security planks.
      d. Continuously weld ends of double configuration security planks to perimeter supports. Weld adjacent panels together along top joint with 1 inch (25 mm) welds at 24 inches
(600 mm) on center. Weld edge of panels to perimeter supports with 1 inch (25 mm)
welds and 24 inches (600 mm) on center. Remove exposed projecting burrs, edges,
and rough spots resulting from welding operations by grinding smooth.

e. Provide intermediate carriers for ends of security planks that are not supported by
perimeter supports. To attach security planks to intermediate carriers, use same
method as that used for attaching security planks to perimeter supports.

1) Support intermediate carriers from structure above be secondary support system
spaced at 48 inches (1220 mm) o.c. and bolted to carriers.

2. Install each access door within one security plank and attach by continuously welding
access door frame to security plank.

3. Provide steel angle reinforcement on each side of opening that exceed 12 inches (300 mm)
in any direction, welded to panels.

3.04 FIELD QUALITY CONTROL

A. Inspect installed products to verify compliance with requirements. Prepare inspection reports
and indicate compliance with and deviations from the Contract Documents

B. Remove and replace security ceiling systems where inspections indicate that work does not
comply with specified requirements.

C. Perform additional inspections to determine compliance of replaced or additional work. Prepare
inspection reports.

D. Prepare field quality-control certification that state installed products and their installation comply
with requirement in the Contract Documents.

3.05 CLEANING

A. Remove and replace work that cannot be successfully cleaned and repaired to permanently
eliminate evidence of damage, including dented and bent units.

B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and
abraded areas of shop paint, and paint exposed areas with same material as that use for shop
painting; comply with SSPC-PA 1 four touching up shop-painted surfaces.

1. Apply by brush or spray to provide a minimum dry film thickness of 2 mils (0.05 mm).

C. Metallic-Coated Steel Surfaces: Clean field welds, bolted connections, and abraded areas and
repair zinc or zinc-iron coating to comply with ASTM A 780.

END OF SECTION
PART 1  GENERAL

1.01  SCOPE OF WORK

A. The furnishing of and paying for all labor, materials, services, appliances and equipment necessary for execution, installation and completion of all work specified herein and as shown on drawings.

B. Section includes:
   1. Resilient finished floor tile and rubber base.
   2. Installation materials and adhesives required to complete installation of floor and base specified herein.

1.02  REFERENCES


F. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.


S. NSF 332 - Sustainability Assessment for Resilient Floor Coverings; 2012.

T. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; Resilient Floor Covering Institute; October 2011.

1.03 SUBMITTALS

A. Submit under provisions of Section 013000.

B. Product Data: Provide data on specified products describing physical and performance characteristics and sizes.

C. Samples: Submit two samples illustrating color and pattern for each material specified for color selection by Architect.

1.04 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 017200.

B. Submittals

1.05 PROJECT WARRANTIES, OPERATION AND MAINTENANCE DATA

A. Submit cleaning and maintenance data under provisions of Section 017250.

B. Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 016000.

B. Deliver materials in original, unopened, protective packaging, with manufacturer's labels indicating brand name, pattern, size and thickness as applicable, legible and intact.

C. Do not begin installation until sufficient materials to complete a room are received.

D. Store material in a heated space protected from the weather and maintained at a temperature of 65 degrees F - 100 degrees F.
1.07 ENVIRONMENTAL REQUIREMENTS

A. Maintain the temperature of the space to receive the flooring and the materials to be installed at a minimum of 65 degrees F and maximum of 100 degrees F for at least 48 hours prior to, during, and 48 hours after installation. Maintain a minimum temperature of 55 degrees F thereafter.

1.08 EXTRA MATERIAL

A. Furnish under provisions of Section 017000.

B. Before acceptance, contractor is to deliver to the Owner two boxes (24 pieces) of each color of floor tile for the Owner’s use in marked cartons.

PART 2 - PRODUCTS

2.01 MANUFACTURER AND MATERIAL - VINYL COMPOSITION TILE (LVT)

A. Mannington Nature’s Path (6” x 36”)

B. LVT to be vinyl plank with micro bevel edges with wear layer to have Quantum Guard HP urethane aluminum oxide topcoat cured by UV process. Overall thickness to be .100 inches with wear layer thickness to be .020 inches. Static load limit to be 750 psi.

C. Warranty to be limited 10 year commercial warranty with limited 10 year quantum guard HP finish warranty.

D. Colors: Heritage Cherry Nature

2.02 MANUFACTURER AND MATERIAL - BASE

A. Equivalent to Johnsonite Tightlock Carpet and Resilient/Topset Rubber Wall Base.

B. Base to be standard coved base 4 or 6 inches high, as indicated on drawings, 1/4 inch minimum thickness wedge shaped in 120 foot roll meeting ASTM F-1861, Type TP and TV Rubber, Group 1. Provide straight base in carpeted areas.

C. Color: #63 Burnt Umber

2.03 ACCESSORIES

A. Transition Strips: Equivalent to Johnsonite T molding and track tapered as required to meet abutting materials. Color is to be #63 Burnt Umber.

B. Subfloor Filler: White pre-mixed latex type recommended by floor material manufacturer.

C. Primers and Adhesives: As recommended by manufacturer of flooring material, for surface and use conditions required and to comply with manufacturer warranty requirements.

D. Sealer and Wax: Type recommended by flooring manufacturer.
PART 3 - EXECUTION

3.01 EXAMINATION

A. Surfaces to receive resilient flooring to be free from irregularities and level to within 1/8 inch in 10 feet. Reference Section 033000.

B. Allowable tolerance of finished flooring system: Level within 1/8 inch in 10 ft (non-accumulating).

C. Examine surfaces scheduled to receive flooring, stair treads and base for unevenness, irregularities and dampness that would affect quality and execution of work.

D. Areas to which floor and base units will be cemented must be free of oils, form residue or materials that will affect bond capabilities of adhesive.

E. Beginning of installation means acceptance of substrate and site conditions.

3.02 PREPARATION

A. Fill all cracks, etc., in sub-floor where required with vinyl floor patch and trowel smooth. Apply vinyl floor patch to align tile vertically with adjacent floor finishes; feather to edge in 3 feet - 0 inches ±.

B. Apply, trowel, and float filler to leave a smooth, flat, hard surface.

C. Prohibit traffic from area until filler is cured.

D. Vacuum clean substrate.

E. Apply primer to surfaces as recommended by manufacturer.

3.03 INSTALLATION - FLOOR TILE

A. Install tile and base in accordance with instructions of the manufacturer.

B. Mix tile from container to ensure shade variations are consistent.

C. Spread only enough adhesive to permit installation of materials before initial set.

D. Cut tile to fit accurately at joining with other material. Lay tile symmetrically about center line of rooms or spaces with tile against walls not less than 6 inches wide. Lay tile with joints tight and in true alignment. Tile against wall should be same width on each side of room and shall project through door openings for pattern continuation.

E. Install rubber reducer strip at all points where resilient tile stops without abutting other material and not covered by metal edge trim.

F. Terminate flooring at centerline of door openings where adjacent floor finish is dissimilar.

G. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

H. Install flooring in pan type floor access covers. Maintain floor pattern.
I. Install flooring under movable partitions without interrupting floor pattern.

3.04 INSTALLATION - BASE MATERIALS

A. Install base securely, completely around walls of all space specified and around bases of permanently installed casework, millwork and equipment, making a continuous base.

B. Miter internal corners. At external corners, use premolded units. At exposed ends use premolded units.

C. Install base on solid backing. Bond tight to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.05 CLEANING, WAXING AND ADJUSTING FLOOR

A. Adjusting: Contractor shall inspect and make necessary adjustments within one month of time that heat is supplied continuously in finish areas. All tile that are not "seated" in place, level with surrounding tile, shall have heat applied locally and shall be quickly rolled to the surrounding level of floor tile. All tile showing minor breaks and fractures shall be repaired with heat and quick rolling. All tile showing broken corners or fracture lines entirely across their surface shall be warmed, carefully removed and new tile of same color and thickness substituted therefor.

B. Cleaning: Upon completion (allow 5 days after) of the installation of floor covering, adjacent work, and after materials have set, clean all surfaces thoroughly with a neutral cleaner as recommended by the manufacturer for the type of floor covering material installed, rinse thoroughly and let dry.

C. Waxing: Apply two (2) coats of a commercial quality polish (non-slip) or other finish as recommended by the floor covering manufacturer and buff each coat to a lustrous sheen.

3.06 PROTECTION OF WORK

A. Protect finished work under provisions of Section 015000.

B. Prohibit traffic on floor finish for 48 hours after installation.

END OF SECTION
PART 1  GENERAL

1.01 SECTION INCLUDES

A. Carpet tile, fully adhered.
B. Accessories.
C. Preparation of existing and new surfaces to receive flooring in strict accord with the manufacturer’s written instructions. Removal of all existing floor finish material in areas to receive new flooring. See drawings for preparation requirements of existing concrete floor.

1.02 REFERENCE STANDARDS

C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.
E. CRI 105 - Standard for Installation of Residential Carpet; 2015.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.
B. Test Reports: Before the first delivery of carpet, submit certified copies of the test reports furnished by an independent testing laboratory, covering the minimum requirements, including flammability and static control and tuft bind as specified. Accompanying the test reports, submit a certificate of compliance, stating that future deliveries of this same quality carpet will conform to the specifications and test reports as submitted, signed by an officer of the carpet manufacturer’s company. Submit and change in materials or manufacturing processes affecting the appearance of changes in specifications for approval before any change is made to the purchased product.
C. Shop Drawings: Indicate layout of joints, direction of carpet pile, and location of edge moldings.
D. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
E. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
F. Submit two, 12 inch long samples of edge strip.
G. Certification: Prior to installation of flooring, submit written certification by flooring subcontractor that condition of the sub-floor is acceptable.
H. Substrate Requirements: Submit certification signed by the flooring subcontractor that concrete substrates do not exceed manufacturer’s maximum range for moisture emission and alkalinity.
I. Submit data documenting VOC content of carpet tile and adhesives; copy of current CRI
Approved Products Listing is acceptable.

J. Manufacturer's Installation Instructions: Indicate special procedures.

K. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

L. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01600 - Product Requirements, for additional provisions.
   2. Additional Material:
      a. Attic Stock: Provide attic stock in the amount of 10% minimum of the total carpet quantity required for each carpet color and pattern, from the same production run, clearly labeled and marked as to carpet number (Finish Schedule), manufacturer, color and pattern. Provide attic stock in unopened cartons only. Store attic stock in an orderly manner in areas designated by the Owner.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in installing carpet with minimum three years' experience.

1.05 FIELD CONDITIONS

A. Protect materials from damage during handling, delivery, and storage at the jobsite.

B. Deliver materials to Project in manufacturer's original, unopened containers, clearly marked to size, dye lot and material.

C. Store materials free of ground and cover completely to prevent intrusion of moisture or other damage.

D. Store materials in area of installation for minimum period of 24 hours prior to installation.

E. Maintain minimum 70 degrees F ambient temperature 24 hours prior to, during, and 24 hours after installation.

F. Ventilate installation area during installation and for 72 hours after installation.

G. Carpet installation will occur on a floor after general construction is substantially complete, which means that the areas, except for carpet and vinyl base, are complete to the extent that the floor may be occupied or used by the Owner for the purpose for which it is intended.

1.06 WARRANTY

A. Warrant carpet materials to be free from undue wear (less than 10% during the warranty period), and for control of static electricity as specified herein in writing for a period of 10 years after completion of installation.

B. Warrant carpet installation to be free from wrinkles, bubbles, puckering or other conditions due to faulty installation for a period of 2 years after completion of installation.

C. During the warranty period, replace any carpet that does not provide an attractive appearance due to the above conditions.

PART 2 PRODUCTS

2.01 MATERIALS

A. Carpet Tile: Tufted, Textured Loop Pile, manufactured in one color dye lot.
   1. Product: Milliken “Dissident”, 24” x 24”, total weight of 4600 g/m², pile height of 3-5 mm, tuff density of 185, 500 per m².
   3. Warranty: 15 year warranty
2.02 ACCESSORIES

A. Sub-Floor Filler: White premix latex; type recommended by flooring material manufacturer.

B. Transition Strips:
   1. LVT to Carpet – Equivalent to Johnsonite T molding and track, tapered as required to meet abutting materials. Color to be #63 Burnt Umber.
   2. Tile to Carpet – Equivalent to Schluter RENO-TK. Finish to be clear anodized aluminum.

C. Resilient Base: As specified in Section 09 6600.

D. Adhesives: Acceptable to carpet tile manufacturer, compatible with materials being adhered; maximum VOC of 50 g/L; CRI Green Label certified.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that sub-floor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive base.

C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to sub-floor surfaces.

D. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for flooring installation by testing for moisture and pH.
   1. Test in accordance with ASTM F710.
   2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

B. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.

C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

D. Vacuum clean substrate.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of sub-floor conditions.

B. Install carpet tile in accordance with manufacturer's instructions and CRI Carpet Installation Standard.

C. Blend carpet from different cartons to ensure minimal variation in color match.

D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.

E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.

F. Locate change of color or pattern between rooms under door centerline.

G. Fully adhere carpet tile to substrate.

H. Trim carpet tile neatly at walls and around interruptions.
I. Complete installation of edge strips, concealing exposed edges.

J. Apply wall base to walls, columns, pilasters, casework and cabinets in toe spaces and other permanent fixtures in rooms and areas where base is required using manufacturer’s recommended adhesive.

K. Miter cut interior and exterior corners of stainless steel base. Lightly grind exterior corners to remove burrs and sharp edges.

L. Provide finished surfaces free from defects affecting appearance and serviceability of the carpet and base.

3.04 CLEANING

A. After installation in an area is complete, remove waste and excess materials, tools and equipment, dirt and debris from the building.

B. Remove excess adhesive without damage, from floor, base and wall surfaces.

C. Clean and vacuum carpet surfaces with an upright, beater bar type vacuum cleaner and clean soiled areas of carpeting.

D. Replace carpeting that cannot be cleaned satisfactorily for acceptance by the Architect.

E. Clean stainless steel base. Remove and replace base that is damaged or scratched if required by the Architect.

END OF SECTION
PART 1  GENERAL

1.01  SCOPE OF WORK

A. Furnishing of and paying for all labor, materials, services, appliances and equipment necessary for execution, installation and completion of all work specified herein and as shown on drawings.

B. Section includes:
   1. All troweled in place resinous (urethane) mortar with quartz broadcast topping seamless flooring, cove base and waterproofing membrane where and as indicated on drawings complete with all underlayment coatings, primers, and top coatings as required for a complete functioning wall floor and base system.
   2. Preparation of all existing and new surfaces to receive finish systems specified herein including chemical cleaning, wire brushing, machine abrasive cleaners, wet or dry blasting, scrubbing, etc. as may be required to produce a manufacturer-approved substrate surface.
   3. Saw cutting or equipment preparation to receive and properly terminate all materials specified herein.
   4. Complete installation, protection, tools, equipment, ventilation and accessories required for complete installation.

1.02  SUBMITTALS

A. Product Data: For each type of product indicated, include manufacturer’s technical data, application instructions, and recommendations for each resinous flooring component required.

B. Samples for Verification: For each resinous flooring system required, 6 inches (150 mm) square, applied to a rigid backing by Installer for this Project.

C. Product Schedule: Use resinous flooring designations indicated in Part 2 and room designations indicated on Drawings in room finish schedule.

D. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.

E. Maintenance Data: For resinous flooring to include in maintenance manuals.

1.03  QUALITY ASSURANCE

A. No request for substitution shall be considered that would change the generic type of floor system specified (i.e. Urethane mortar base with decorative broadcast quartz system). Trade names and methods of Stonhard, Inc. Maple Shade, New Jersey, are generally used herein for quality reference and basis of design only. See Section 01 6000 for substitution of materials.
   1. Other manufacturer’s for consideration are:
      a. Prime Coat
      b. Tnemec
      c. Sherwin Williams
      d. Other approved equivalent systems

B. Installer Qualifications: Engage an experienced installer (applicator) who is experienced in applying resinous flooring systems similar in material, design, and extent to those indicated for
this Project, whose work has resulted in applications with a record of successful in-service performance, and who is acceptable to resinous flooring manufacturer.
1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to apply resinous flooring systems indicated.
2. Contractor shall have completed at least 10 projects of similar size and complexity.

C. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, grouting coats, and topcoats, through one source from a single manufacturer, with not less than ten years of successful experience in manufacturing and installing principal materials described in this section. Provide secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from source recommended by manufacturer of primary materials.

D. Manufacturer Field Technical Service Representatives: Resinous flooring manufacturer shall retain the services of Field Technical Service Representatives who are trained specifically on installing the system to be used on the project.
1. Field Technical Services Representatives shall be employed by the system manufacturer to assist in the quality assurance and quality control process of the installation and shall be available to perform field problem solving issues with the installer.

E. Mockups: Apply mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Apply full-thickness mockups on 48-inch- (1200-mm-) square floor area selected by Architect.
   a. Include 48-inch (1200-mm) length of integral cove base.
2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
3. Sign off from Designer and Owner/Owners agent on texture for slip resistance must be complete before installation of flooring system.

F. Pre-installation Conference:
1. General Contractor shall arrange a meeting not less than thirty days prior to starting work.
2. Attendance:
   a. General Contractor
   b. Designer/Owner’s Representative
   c. Manufacturer/Installer’s Representative

1.04 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer’s labels indicating brand name and directions for storage and mixing with other components.

B. Store materials to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects.

C. All materials used shall be factory pre-weighed and pre-packaged in single, easy to manage batches to eliminate on site mixing errors. No on site weighing or volumetric measurements allowed.
1.05 PROJECT CONDITIONS

A. Environmental Limitations: Comply with resinous flooring manufacturer’s written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.
   1. Maintain material and substrate temperature between 65 and 85 deg. F (18 and 30 deg. C) during resinous flooring application and for not less than 24 hours after application.

B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.

C. Close spaces to traffic during resinous flooring application and for not less than 24 hours after application, unless manufacturer recommends a longer period.

D. Concrete substrate shall be properly cured for a minimum of 30 days. A vapor barrier must be present for concrete subfloors on or below grade. Otherwise, an osmotic pressure resistant grout must be installed prior to the resinous flooring.

1.06 WARRANTY

A. Manufacturer shall furnish a single, written warranty covering both material and workmanship for a period of (3) full years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 RESINOUS FLOORING

A. Available Products: Subject to compliance with requirements, urethane mortar systems, multiple layers of liquids and broadcasts will not be accepted.

B. Products: Subject to compliance with requirements.
   1. Basis of Design: Stonhard, Inc.; Stonshield URI.
   2. Refer to Para. 1.03.A.1 for additional approved manufacturers.

C. System Characteristics:
   1. Color and Pattern: Flagstone
   2. Wearing Surface: Medium texture.
   3. Integral Cove Base: Refer to drawings for locations
   4. Overall System Thickness: nominal 3/16”.

D. System Components: Manufacturer’s standard components that are compatible with each other and as follows:
   1. Primer:
      a. Material Design Basis: Stonhard Urethane Primer
      b. Resin: Urethane 100% Solids
      c. Formulation Description: Stonhard Urethane Primer; 3 component.
      d. Application Method: squeegee and back-roll
      e. Number of Coats: One
   2. Mortar Coat:
      a. Material Design Basis: Stonclad UR
      b. Resin: Urethane 100% solids.
      c. Formulation Description: Urethane mortar; 4 component.
d. Application Method: Metal trowel.
   1) Thickness of Coats: 1/8”, with primer coat
   2) Number of Coats: One

e. Aggregate: Pigmented Aggregates

3. Undercoat:
   a. Material Design Basis: Stonshield Urethane Undercoat
   b. Resin: Polyaspartic, Aliphatic Urethane
   c. Formulation Description: 100% solids, 2 component.
   d. Type: Clear.
   e. Finish: Gloss
   f. Number of Coats: one

4. Broadcast Media:
   b. Type: pigmented; blended.
   c. Color: Selected from Manufacturer’s standards.
   d. Finish: standard.
   e. Number of Coats: one.
   f. Pattern: Tweed

5. Sealer
   a. Material Design Basis: Stonseal CA7 Sealer
   b. Resin: Aliphatic polyaspartic urethane.
   c. Formulation Description: (2) two-component, UV resistant.
   d. Type: Clear
   e. Finish: Gloss
   f. Number of Coats: One

2.02 ACCESSORY MATERIALS

A. Primer: Type recommended by manufacturer for substrate and body coats indicated. Formulation Description:


C. Joint Sealant: Type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated. Allowances should be included for Stonflex MP7 joint fill material, and Stonproof CT5 concrete crack treatment.

D. Waterproofing Membrane: Type recommended by manufacturer for substrate and primer and body coats indicated. Formulation Description Stonproof ME7.

PART 3 EXECUTION

3.01 PREPARATION

A. General: Prepare and clean substrates according to resinous flooring manufacture’s written instructions for substrate indicated. Provide clean, dry, and neutral Ph substrate for resinous flooring application.

B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring.
1. Mechanically prepare substrates as follows:
   a. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
   b. Comply with ASTM C 811 requirements, unless manufacturer’s written instructions are more stringent.
2. Repair damaged and deteriorated concrete according to resinous flooring manufacturer’s written recommendations.
3. Verify that concrete substrates are dry.
   a. Perform in situ probe test, ASTM F 2170. Proceed with application only after substrates do not exceed a maximum potential equilibrium relative humidity of 85 percent.
   b. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with application only after substrates have maximum moisture-vapor-emission rate of 7 lb. of water/1000 sq. ft. of slab in 24 hours.
   c. Perform additional moisture tests recommended by manufacturer. Proceed with application only after substrates pass testing.
4. Verify that concrete substrates have neutral Ph and that resinous flooring will adhere to them. Perform tests recommended by manufacturer. Proceed with application only after substrates pass testing.

C. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer’s written instructions.

D. Use patching and fill material to fill holes and depressions in substrates according to manufacturer’s written instructions.

E. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer’s written recommendations. Allowances should be included for Stonflex MP7 joint fill material, and CT5 concrete crack treatment.

3.02 APPLICATION

A. General: Apply components of resinous flooring system according to manufacturer’s written instructions to produce a uniform, monolithic wearing surface of thickness indicated.
   1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
   2. Cure resinous flooring components according to manufacturer’s written instructions. Prevent contamination during application and curing processes.
   3. At substrate expansion and isolation joints, provide joint in resinous flooring to comply with resinous flooring manufacturer’s written recommendations.
      a. Apply joint sealant to comply with manufacturer’s written recommendations.
B. Apply primer where required by resinous system, over prepared substrate at manufacturer’s recommended spreading rate.

C. Integral Cove Base: Basis of design: Stonshield Cove Base, apply cove base mix to wall surfaces before applying flooring. Apply according to manufacturer’s written instructions and details including those for taping, mixing, priming, troweling, sanding and top coating of base. Round internal and external corners. Refer to drawings for locations and height.

D. Body Coat: apply metal trowel single mortar coat in thickness indicated for flooring system. Hand or power trowel and grout to fill voids. When cured, remove any surface irregularities by lightly abrading and vacuuming the floor surface.
E. Undercoat: Mix and apply undercoat with strict adherence to manufacturer’s installation procedures and coverage rates.

F. Broadcast: Immediately broadcast quartz silica aggregate into the undercoat using manufacturer’s specially designed spray-caster. Strict adherence to manufacturer’s installation procedures and coverage rates is imperative.

G. Apply topcoat(s) in number of coats indicated for flooring system and at spreading rates recommended in writing by manufacturer.

3.03 TERMINATIONS

A. Chase edges to “lock” the coating system into the concrete substrate along lines of termination.

B. Penetration Treatment: Lap and seal coating onto the perimeter of the penetrating item by bridging over compatible elastomer at the interface to compensate for possible movement. Install thermal isolation construction detail where applicable and indicated in detail drawings.

C. Trenches: Continue coating system into trenches to maintain monolithic protection. Treat cold joints to assures bridging of potential cracks.

D. Treat floor drains by chasing the coating to lock in place at point of termination. Install thermal isolation construction detail where applicable and indicated in detail drawings.

3.04 JOINTS AND CRACKS

A. Treat control joints to bridge potential cracks and to maintain monolithic protection.

B. Treat cold joints and construction joints to bridge potential cracks and to maintain monolithic protection on horizontal and vertical surfaces as well as horizontal and vertical interfaces.

C. Discontinue floor coating system at vertical and horizontal contraction and expansion joints by installing backer rod and compatible sealant after coating installation is completed. Provide sealant type recommended by manufacturer for traffic conditions and chemical exposures to be encountered.

3.05 FIELD QUALITY CONTROL

A. Material Sampling: Owner may at any time and any numbers of times during resinous flooring application require material samples for testing for compliance with requirements.
   1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified, sealed, and certified in presence of Contractor.
   2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer’s product data.
   3. If test results show applied materials do not comply with specified requirements, pay for testing, remove noncomplying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements.
3.06 CLEANING, PROTECTING, AND CURING

A. Cure resinous flooring materials in compliance with manufacturer’s directions, taking care to prevent contamination during stages of application and prior to completion of curing process. Close area of application for a minimum of 18 hours.

B. Protect resinous flooring materials from damage and wear during construction operation. Where temporary covering is required for this purpose, comply with manufacturer’s recommendations for protective materials and method of application. General Contractor is responsible for protection and cleaning of surfaces after final coats.

C. Cleaning: Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer.

END OF SECTION
PART 1  GENERAL

1.01  SUMMARY

A. Section Includes: Decorative 3/4” (19mm) thick prefinished panel with pre-engineered attachment clip along with hardware and trim systems for installation directly to studs or solid substrate.
   1. Hardware: Aluminum cross rails with cross splines.
   2. Panels:
      a. High Pressure Laminate adhered to wood fiber substrate and having a balancing backer sheet.

1.02  REFERENCES

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

B. Architectural Woodwork Standards as published by the Architectural Woodwork Institute, the Architectural Woodwork Manufacturers Association of Canada, and the Woodwork Institute.

1.03  SUBMITTALS

A. Product Data: Submit sufficient manufacturer's data to indicate compliance with these specifications, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

B. Shop Drawings: Submit elevations of each wall showing location of paneling and trim members with respect to all discontinuities in the wall elevation.

C. Selection Samples: Submit manufacturer’s standard color and pattern selection samples representing manufacturer's full range of available colors and patterns.

D. Samples for Verification: Submit sample for each component and for each exposed finish required, prepared on samples of size indicated below complete with exposed molding and trim samples. Sample to indicate type, finish, and color specified.
   1. Prints: Submit 6” (154mm) by 10” (254mm) section of panel for each panel selected indicating the color, texture, and pattern required.
      a. Submit complete with specified applied finish.
      b. For selected patterns show complete pattern repeat.
   2. Metal Veneers Panel: Submit 6” (154mm) by 10” (254mm) samples of each type and color.
   3. Wood Veneers: Submit sample sets of [each] wood veneer with stain color and finish required. Sample size approximately 6” (154mm) by 10” (254mm). Sample sets to show the full range of normal color and texture variations expected.

E. Manufacturers Material Safety Data Sheets (MSDS) for adhesives, sealants and other pertinent materials prior to their delivery to the site.

F. Maintenance Instructions
1.04 QUALITY ASSURANCE

A. Conform to building code requirements for interior finish for smoke and flame spread requirements as tested in accordance with:
   1. ASTM E 84 (Method of test for surface burning characteristics of building Materials)
   2. Required Rating – Class A.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver panels and associated materials factory packaged on strong pallets and properly packaged or protected.
   1. Upon delivery carefully inspect all cartons, packages, pallets and protective wrap for damage or material shortage.
   2. Open and inspect suspect packages, cartons or wrapped pallets for damage.
   3. Contact shipper immediately to report any damaged or missing materials.

B. Store products in manufacturer's unopened packaging until ready for installation.
   1. Maintain plastic or other protective wrap in place during on site handling until ready for installation.
   2. Keep panels clean and do not stack panels after removal of protection.

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

1.06 PROJECT CONDITIONS

A. Wood composite panels are subject to the effects of humidity and temperature. Do not use in kitchens, rest rooms, or other high humidity areas.

B. Partition walls are to be finished and the building completely closed. Walls shall be thoroughly dry and concrete cured and dry before starting installation.

C. HVAC system must be operable and installation area must be balanced to normal operating conditions.

D. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. To ensure product performance, a temperature range of 60°-80°F (16°C-27°C) and a humidity range of 35-55% must be maintained during storage, installation and product life cycle. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.07 COORDINATION AND SEQUENCING

A. Except as specified by the architect, it's recommended to locate trim members so that panel lines coordinate with doors, headers, jambs and other discontinuities in a wall.

B. Vapor barrier shall be used on exterior walls behind backing to discourage warping.

C. Coordinate with casework manufacturer. Deliver material to the fabrication shop.
1.08  WARRANTY

A. Standard Warranty: All products shall be warranted to be free from defects for a period of one (1) year from the date of substantial completion.

PART 2  PRODUCTS

2.01 ACCEPTABLE PRODUCT

A. Marlite; 202 Harger Street, Dover, OH 44622. 800-377-1221 FAX (330) 343-4668 Email: info@marlite.com www.marlite.com or approved equivalent.

B. Product: Surface Systems – MAP System

C. Substitution: Under provision of Section 01 6000.

2.02 HARDWARE

A. Horizontal Main Rail and vertical Cross Spline alignment framing.
   1. NMR - Narrow Main Rail, to create detailed 1/4” horizontal reveals. Furnished in full 8’- 0” (2.44m) lengths.
   2. NCS - Narrow Cross Spline, to create detailed 1/4” vertical reveals. Furnished cut-to-size to match panel.

B. Panel Trim: Aluminum Profiles furnished in full 10’- 0” (3m) lengths
   1. Outside Corner – Narrow Profile, Marlite #NL-760.
   2. Edge/Inside Corner – Narrow profile; Marlite #NL-770.

C. Hardware and Trim Material:
   1. Aluminum - Heavy weight extruded aluminum 6063-T5 alloy and prefinished at the factory.
      a. Concealed Aluminum - Mill finish
      b. Exposed Aluminum - Clear satin anodized.

2.03 PANELS

A. Panel Configuration:
   1. Face dimensions: As indicated on the drawings.
   2. Panel thickness - 3/4” (1.9cm) thick.

B. Wood Fiber Substrate:
   1. Medium density wood fiberboard conforming to ANSI A208.2, industrial-grade MDF and having No-Added Formaldehyde.

C. High Pressure Laminate: Vertical grade high pressure plastic laminate adhered to wood fiber substrate.
   1. Edges - Square, and sealed, to provide a black edge.
   2. Balancing Backer: Kraft paper that does not contribute to or pose an unusual additional fire hazard.
   3. Color and Pattern: “Windsor Anigre 318”.

2.04 ADHESIVES

A. Marlite Brand C-109 solvent based adhesive or as otherwise approved by Marlite.
2.05 FABRICATION

A. All framing, panels, hardware and accessories shall be factory finished and ready to install except for field fabrication as required by jobsite and perimeter conditions.
   1. Refinish field cut panel edges in accordance with manufacturer’s instruction before installation.
   2. For all cut-outs, drill corners for a minimum 1/8” radius.

PART 3 EXECUTION

3.01 EXAMINATION

A. Installer's Examination: Examine conditions under which construction activities of this section are to be performed. Submit written notification to Architect and system manufacturer if such conditions are unacceptable. Beginning erection constitutes installer's acceptance of conditions.
   1. Verify that a vapor barrier has been provided on exterior walls behind backing to prevent warping.
   2. Verify backing panels are smooth, solid, and flat. All drywall joints are to be taped and finished.
   3. Verify that walls are primed before installation begins.
   4. Verify mechanical, electrical, and building service and/or items affecting work of this section are placed and ready to receive this work.
   5. Verify that stud spacing does not exceed 24” (600mm) on-center.

B. Structural walls are to be finished, with building completely closed. Walls shall be thoroughly dry before starting installation.

3.02 PREPARATION

A. Conditioning: Panels must be allowed to acclimate to a balanced environment in the installation location for 72 hours prior to installation.

B. Protect existing surfaces with drop cloths.

C. Except as directed by the architectural drawings, before installing, examine panels and arrange to achieve best combination of color, pattern, texture and grain.

3.03 INSTALLATION

A. Install all materials in strict accordance with the manufacturer’s installation instructions with hardware straight, plumb, and level.
   1. Anchor units rigidly and securely in place.
   2. Cut sheets to meet existing supports.

B. Fasten supports and trim using #6 trim-head screws anchored into a stud or other solid substrate at 16” (40.64cm) centers. Where screws do not hit the studs, fasten with adhesive in accordance with the manufacturer’s recommendations. Pre-drill holes thru the members and fasten the screw flush with the flange on the aluminum profile. Where necessary countersink for the screw head to seat flush with the flange.

C. Avoid contamination of the panel faces with adhesives, solvents or cleaners during installation.
3.04 CLEANING AND PROTECTION

A. Clean and remove dust and other foreign matter from panel and framing surfaces. Clean finishes in accordance with manufacturer's instructions.

END OF SECTION
PART 1  GENERAL

1.01 SECTION INCLUDES
   A. Fabric-covered fiberglass core panels and mounting accessories.

1.02 REFERENCE STANDARDS

1.03 SUBMITTALS
   A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
   B. Product Data: Manufacturer's printed data sheets for products specified.
      1. Preparation instructions and recommendations.
      2. Storage and handling requirements and recommendations.
      3. Installation methods.
   C. Shop Drawings: Fabrication and installation details, panel layout, and fabric and reveal orientation. Include width and height of panels.
   D. Verification Samples:
      1. Provide two sets of fabricated samples of each type of fabric panel specified; 12 x 12 in, showing construction, edge details and fabric covering.
   E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
      1. See Section 01 6000 - Product Requirements, for additional provisions.
      2. Provide extra fabric equal to 5 percent of total installed of each color and pattern.
   F. Test Reports: Certified test data from an independent test agency verifying that wall and ceiling systems meet specified requirements for acoustical and fire performance.
   G. Manufacturer's Qualification Statement.
   H. Installer's Qualification Statement.
   I. Warranty Documentation: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE
   A. Manufacturer Qualifications: Company with not less than 5 years of experience in manufacturing acoustical products similar to those specified.
   B. Install Qualifications: Approved by manufacturer as qualified to perform the work required.

1.05 DELIVERY, STORAGE, AND HANDLING
   A. Protect acoustical panels from moisture during shipment, storage, and handling. Deliver in factory-wrapped bundles; do not open bundles until panels are needed for installation.
   B. Store panels flat, in dry, well-ventilated space; do not stand panels on end.
   C. Protect panel edges from damage.

1.06 MOCK-UP
   A. See Section 01 4000 – Quality Requirements for additional mock-up requirements.
   B. Construction mock-up of acoustic stretched-fabric wall system at location indicated by Architect.
1. Minimum mock-up dimensions; 96 by 96 inches.
2. Approved mock-up may remain as part of the Work.

1.07 FIELD CONDITIONS

A. Do not begin installation until interior conditions have reached temperature and humidity that will be maintained during occupancy. Do not install products under environmental conditions outside manufacturer’s absolute limits.

1.08 WARRANTY

A. See Section 01 7250 Closeout Submittals, for additional warranty requirements.
B. Correct defective work within five year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acoustical Fabric Panels: Basis of Design:

B. Substitutions: See Section 01 6000 - Product Requirements.
C. Provide each type acoustical panels by one manufacturer.

2.02 ACOUSTICAL FABRIC WALL PANELS

   1. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.

B. Fiberglass Core Panels:
   1. Noise Reduction Coefficient (NRC): 0.80 when tested in accordance with ASTM C423.
   2. Panel Width: As detailed.
   3. Panel Height: As detailed.
   4. Panel Thicknesses: 1 inch, impact resistant
   5. Edges: Perimeter edges reinforced by a formulated resin hardener.
      a. Fabric wrapped on all four sides, minimum 2 inch fabric return.

C. Fabric Covering: Seamless fabric facing material, for stretched covering of core material.
   1. Fabric: Carnegie Xorel Dash fabric with white scrim over the fiberglass panel.
   2. Type: FAB-1, refer to finish schedule for color and pattern.

2.03 FABRICATION

A. General: Fabricate panels to sizes and configurations indicated. Fabric facing installed without sagging, wrinkles, blisters, or visible seams.
B. Tolerances: Fabricate to finished tolerance of plus or minus 1/16 in for thickness, overall length and width, and squareness from corner to corner.

2.04 ACCESSORIES

A. Accessories for Fabric Panels: Manufacturer's standard accessories for concealed support, designed to allow panel removal, and as follows:
   1. Two-part “Z” clip and base-support bracket system; brackets designed to support full weight of panels and clips designed for lateral support, with one part mechanically attached to back of panel and the other attached to substrate, minimum 20 gauge satin-coated steel.
B. Fiberboard: Rigid fiberglass panels, 1 inch thick.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates for conditions detrimental to installation of acoustical panels. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation of this work.

B. Prepare substrate surfaces using methods as recommended by the manufacturer for achieving acceptable result as required for this work.

C. Remove wall plates and other obstacles, and properly prepare substrates to receive frames and acoustic material in accordance with manufacturer’s instructions.

3.03 INSTALLATION

A. Install acoustical panels in locations indicated, following installation recommendations of panel manufacturer. Align panels accurately, with edges plumb and top edges level. Scribe to fit accurately at adjoining work and penetrations.

B. Panels shall be installed by a licensed installation company trained by the panel manufacturer.

C. Field measure and layout each wall to receive wood and fabric wall system as shown on the plans, elevations and finish schedule.

D. Installer shall provide shimming and adjustments as required to maintain consistent alignment of joints and finished panel faces.

E. Fabric shall be stretched taut and smoothly over the system and securely fastened in the system.

F. Acoustical panels shall be plumb and free of flaws and defects.

G. Install panels to construction tolerances of plus or minus 1/16 in for the following:
   1. Plumb and level.
   2. Flatness.

3.04 CLEANING

A. Clean fabric facing upon completion of installation from dust and other foreign materials, following manufacturer's instructions.

B. Remove surplus materials, trimmed portions of panels, and debris resulting from installation.

3.05 PROTECTION

A. Provide protection of installed acoustical panels until completion of the work.

B. Replace panels that cannot be cleaned and repaired to satisfaction of the Architect.

END OF SECTION
PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The furnishing of and paying for all labor, materials, services, appliances and equipment necessary for the execution, installation, and completion of all work as specified herein and as shown on drawings.

B. Section includes:
   1. Surface preparation, painting, staining, and varnishing of all items noted herein or as shown on drawings to be painted and all items normally painted including generally, but not limited to the following:
      a. New and existing interior mill, galvanized, and bonderized metal.
      b. New and existing interior ferrous metal work such as grilles, rails, stair rails, door frames, doors, borrowed light frames, etc. Do not paint aluminum or stainless steel unless so noted.
      c. Exposed mechanical equipment (not factory finished painted) including duct, conduit, etc., except that located in mechanical rooms or that painted under Division 23 and 26 of these specifications.
      d. New and existing interior concrete and concrete block work.
      e. New and existing interior gypsum board.
      f. New and existing metal doors and frames.
      g. Other work shown, specified or normally painted.
      h. Repainting or refinishing of existing surfaces as noted on drawings and specified herein including all surfaces new or existing, damaged or soiled by work under this contract.
      i. Protection of adjacent and surrounding materials and finishes over or adjacent to which this contractor shall apply his materials. This shall include covering, cleaning, etc., as may be required to assure no damage, disfiguration or staining of adjacent or existing finishes or materials.

1.02 REFERENCES


C. ASTM D4258 - Standard Practice for Surface Cleaning Concrete for Coating; 2005 (Reapproved 2012).


E. ASTM D4260 - Standard Practice for Liquid and Gelled Acid Etching of Concrete; 2005 (Reapproved 2012).


1.03 SUBMITTALS

A. Submit under provisions of Section 013000.

B. Finish Schedule:
   1. All schedules shall be typewritten
   2. Provide Finish Schedule listing each finish by Finish Type in reference to Article 3.09 herein giving the following information:
      a. Manufacturer and type of product used
      b. Number of coats of material
      c. Luster
      d. Type of application

C. Product Data: Provide data on all finishing products and special coatings.

D. Samples: Submit paint manufacturer's "paint fan" illustrating range of colors available for each surface finishing product schedule for color selection.

1.04 PROJECT RECORD DOCUMENTS

A. Submit under provisions of Section 017200.

B. Submittals

1.05 QUALIFICATIONS (APPLICATOR)

A. Applicator: Company specializing in performing the work of this section with minimum 5 years documented experience.

B. Superintendence: This Applicator shall keep a qualified foreman (may be a working foreman), satisfactory to the Owner and Architect, on this work at all times while painting is in progress with this work as his sole duty.

C. Employees: Employ skilled mechanics to ensure the very best workmanship. Quality workmanship is required. Material to be applied by craftsmen experienced in the use of the specific product involved.

1.06 MOCKUPS

A. Provide mockup under provisions of Section 014000.

B. Before proceeding with any painting prepare and finish a sample room, complete or in part, as directed by the Owner and Architect. Finish all areas or items in accordance with the specification and in colors selected by the Owner and Architect. When approved by the Owner and Architect, they shall serve as a standard for workmanship, appearance and materials approved for similar areas or items throughout this project.
1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provision of Section 016000.

B. All materials used on the project shall be stored in a single place as designated. Such storage space shall be kept clean and all damage thereto or to its surroundings shall be made good by the subcontractor.

C. Store materials at minimum ambient temperature of 50 degrees F and a maximum of 90 degrees F, in well ventilated area, and as required by manufacturer's instructions.

D. All soiled or used rags, waste and trash must be removed from the building every night and every precaution taken to avoid the danger of fire.

E. Restrict storage to paint and related equipment. Comply with health and fire regulations.

F. Paint Material:
   1. Deliver paints and enamels ready-mixed to job site. All material must be delivered in their original containers with labels intact.
   2. Container labeling to include manufacturer's name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and reducing.

1.08 ENVIRONMENTAL REQUIREMENTS

A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 60 degrees F for 24 hours before, during, and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.

B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 80 percent, unless required otherwise by manufacturer's instructions.

C. Contractor is to provide forced ventilation when painting within occupied spaces as necessary to prevent hazardous accumulations of dust, fumes, vapors or gases.

1.09 EXTRA MATERIAL

A. Furnish under provisions of Section 017000.

B. Provide a one gallon container of each color per building and surface texture to Owner.

C. Label each container with color, texture, and room locations in addition to the manufacturer's label.

PART 2 - PRODUCTS

2.01 MANUFACTURER - PAINT AND VARNISH

A. Sherwin-Williams

B. Farrell-Calhoun

C. PPG
D. Substitution: Under provision of Section 016000

2.02 MANUFACTURER - ACCESSORIES MATERIAL

A. Thinner, Metal Surface Cleaners, Galvanized Treatment, Filling compounds, Turpentine and Primers - As recommended by paint manufacturer.

2.03 MATERIALS

A. Standards and Manufacturers (Painting)
   1. All paint materials must be equal or exceed Federal Specifications or other standards herein under "Materials" in applicable categories.
   2. Claims by the Contractor as to the unsuitability or unavailability of any materials specified or his inability to produce first-class results with same, will not be entertained unless such claims are made in writing prior to bidding.
   3. All paint materials shall be applied in accord with manufacturer’s directions or as specified herein. As there is a slight variation in the recommended procedures of different manufacturers, such minor variations shall be taken into account in considering or making any proposal of material change.

2.04 FINISHES

A. Refer to Schedule, Article 3.09.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop applied primer for compatibility with subsequent cover materials.

D. Examination includes bond, moisture, and alkali testing as required or recommended by manufacturer. Moisture meter readings of back surfaces shall be less than 4 percent.

E. Beginning of installation means acceptance of surfaces.

3.02 PREPARATION - NEW SURFACES

A. Remove electrical plates, hardware, light fixture trim, and fittings prior to preparing surfaces for finishing.

B. Correct minor defects and clean surfaces which affect work of this section.

C. Shellac and seal marks which may bleed through surface finishes.

D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
E. Gypsum Board Surfaces: Latex fill minor defects. Spot prime defects after repair.

F. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

G. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

H. Uncoated Steel and Iron Surfaces: Remove grease, scale, dirt, and rust. Where heavy coatings of scale are evident, remove by wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.

I. Shop Primed Steel Surfaces:
   1. Several items to receive a painter's finish under this specification will be furnished with a prime coat of paint. It is this contractor's responsibility to determine this by a study of all sections of this specification. As an aid, however, these items are generally as follows:
      a. All structural and miscellaneous steel
      b. Stair handrails, railings, etc.
      c. Steel doors, frames and borrowed light frames
      d. Steel access doors
      e. Heating grilles and diffusers in wall surfaces to be painted
   2. All primed surfaces shall be cleaned, sanded, touched up, and washed with turpentine prior to painting.
   3. If primer has become badly abraded, damaged, or rust formed, sand smooth and apply one coat of primer specified herein before proceeding with paint application specified.
   4. Galvanizing or bonderizing is not considered a primer.

3.03 PREPARATION - EXISTING SURFACES

A. Masonry, Concrete Floors:
   1. Scaling and peeling paint should be removed by scraping and sanding.
   2. Surface to be washed thoroughly with strong detergent solution to remove all grease, oil and soap residue. Rinse thoroughly and allow to dry completely before painting.
   3. Oil, unpainted, steel-troweled floors should be etched with a 10 percent solution of muriatic acid, then thoroughly rinsed. Surface must be completely dry before painting. Floors that have been subjected to long term oil and grease must be aggressively scrubbed with proprietary grease-dissolving compounds, then rinsed thoroughly and allowed to dry completely before etching. CAUTION: Always wear rubber gloves and boots, and work goggles when using muriatic acid. Follow label directions.

B. Masonry, Poured/Precast Concrete, Block Construction Surfaces:
   1. Remove all peeling and scaling paint to a sound substrate by hand scraping, use of mechanical grinders or with high pressure spray equipment.
   2. If mildew is present remove with a commercial mildewcide solution. CAUTION: Use rubber gloves, work goggles and protective clothing.
   3. Multiple coats of paint that are in an advanced state of deterioration and prior applications of paints must be removed by sandblasting or by use of mechanical grinder.
   4. All structural cracks and crevices are to be filled with appropriate patching compounds. Old cracked and loose caulking is to be removed and replaces with a high quality caulking compound.
5. Prime surfaces as specified under Finish Types.
6. Weathered, unpainted masonry surfaces must be free of dirt, grease and oil. Badly weathered concrete, brick or other masonry should be power washed.
7. Where rust staining is evident, apply one coat of Rust Inhibiting Primer.
8. All surfaces that have been defaced with marking pens, crayons or lipsticks are to be solvent washed, then spot primed with primer to control residual "bleeding."
9. Glossy surfaces should be dulled by sanding lightly with #00 sandpaper.

C. Metal, Galvanized Iron:
1. All surfaces must be free of grease and oil and shall be cleaned in accordance with SSPC-SP1-63 "Solvent Cleaning."
2. Peeling and scaling paint and chalk must be removed by scraping, sanding and wirebrushing. Rusted surfaces must be cleaned by scraping, sanding and wirebrushing, then primed with rust inhibitive paints.
3. Weathered, unpainted galvanized iron surfaces must be wirebrushed or power washed to remove deposits of "white rust," then primed with galvanized metal latex primer. Rusted areas must be sanded clean, and spot primed with rust inhibitive paints, then coated overall with galvanized metal latex primer.

D. Metal, Structural or Plate Steel:
1. All surfaces must be free of grease and oil, and cleaned in accordance with SSPC-SP1-63 "Solvent Cleaning" followed by removal of all loose, scaling paint by hand scraping, or by use of power tools. Rusted surfaces to be cleaned in accordance with SSPC-SP2-63 "Hand Tool Cleaning" or SSPC-SP3-63 "Power Tool Cleaning."
2. Glossy surfaces should be dulled by sanding. Where heavy rust, corrosion and deteriorated coatings exist, the surface should be abrasive blast cleaned in accordance with SSPC-SP6-63 "Commercial Blast Cleaning." The surface should be blown off with compressed air to remove traces of blast products, and must be primed within 24 hours with rust inhibitive paints.

E. Drywall, Walls and Ceilings - Interior:
1. Remove all peeling or scaling paint by scraping. Sand areas thoroughly to feather edges smooth with adjacent surface.
2. Cracks, holes and blemished areas are to be filled and sanded flush with adjacent surfaces, then spot primed with finish coating.
3. Surfaces that have been defaced with marking pens, crayons or lipsticks are to be solvent washed, then spot primed with primer to control residual "bleeding."
4. Walls and ceilings in kitchens and bathrooms are to be thoroughly washed with a detergent solution. Glossy surfaces are to be dulled by sanding lightly with #00 sandpaper.
5. Ceilings or walls that exhibit water stains are to be sealed with primer.

3.04 PROTECTION

A. This contractor is advised that he shall be totally responsible for protection of surfaces and finishes adjacent to or beneath his work to the extent that he shall totally clean or pay to have cleaned all surfaces, new or existing, damaged by his materials.

B. Concrete floors are finished floors and shall be totally covered and protected by this contractor during application of his materials within these areas. Extra care must be taken during this work, particularly during spray operation, to provide complete finished floor surfaces without splotches, stains, etc.

C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.
3.05 APPLICATION

A. Apply products in accordance with manufacturer's instructions.

B. All applications to be with brush or roller unless noted otherwise. Use proper roller or brush for application. Brush apply only all varnish. Reference paint finish specifications for more detail.

C. All material shall be evenly applied so as to be free from sags, runs, crawls, or other defects. All coats shall be of proper consistency and well brushed to show the minimum of brush marks, except lacquer and enamel which shall be uniformly flowed, or sprayed. All brushes shall be clean and in good condition.

D. The word "exposed" as used herein means exposed to normal view after completion of total construction. Does not include mechanical equipment ducts, etc. in equipment or mechanical rooms.

E. No work shall be done under conditions that are unsuitable for the production of good results.

F. All coats shall be thoroughly dry before the succeeding coat is applied. Allow at least 24 hrs. between coats, unless special paint is used that requires more or less time for drying.

G. Painting coats as specified are intended to cover surface perfectly. If surfaces are not covered, further coats shall be applied without cost to the Owner.

H. While the painting is being done, the building shall be closed and broom cleaned. Do not paint any area while dust conditions exist in that area, or under conditions of inadequate light.

I. The undercoats of paint and enamel shall be tinted to approximate shade of the final coat.

J. All finishes shall be uniform as to sheen, color and texture.

K. All materials shall be evenly spread and smooth flowed on without runs or sags.

L. All surfaces to be painted shall be cleaned free of loose dirt by brushing or wiping and wiping with a cloth after each sanding before painting.

M. Sand and wool all surfaces prior to painting and lightly sand and wool between all coats to produce smooth surface.

N. Do not paint damp, moist or uncured surfaces, use moisture meter to determine suitability.

O. This contractor shall furnish and place drop cloths for protection of finished floor and other finished work from damage during progress of the work. The contractor shall be responsible for damage caused by him. Reference Article 3.04 Protection above herein.

P. Where fluid unavoidably contacts glass, hardware, or other finished surfaces, it shall be immediately removed while moist.

Q. Where fluid solder flux has been used on metal work, clean thoroughly with benzene before further application.

R. Unprimed steel shall be primed immediately upon delivery to the site.
3.06 CLEANING

A. As work proceeds, promptly remove paint where spilled, splashed or spattered.

B. During progress of work, maintain premises free of unnecessary accumulation of tools, equipment, surplus materials and debris.

C. Collect cotton waste, cloths and material which may constitute a fire hazard; place in closed metal containers and remove daily from site.

D. Inspect all surfaces for skips, blemishes or imperfections. Repaint or repair as required to first class appearance.

E. Clean all adjacent surfaces, hardware, and accessory items damaged by this work. Replace if damage cannot be repaired.

F. Remove all debris from the work site.

3.07 PROTECTION OF FINISH WORK

A. Protect finished work under provisions of Section 015000.

3.08 DETERMINATION OF FINISHES

A. To determine the required types of painter's finish for various areas and surfaces, this contractor shall review the following:
   1. Paint finish or specified numbers on the Room Finish Schedule.
   2. Paint finish or specified numbers on the Door schedule.
   3. The general title designation of material covered under each paint finish description herein.
   4. Example: Paint Finish No. I-1 (interior gypsum board)
      
      1 coat, etc.
      1 coat etc.

      Indicates that all interior gypsum board receives this finish unless schedules are noted otherwise. If the room finish schedule carries the notation "NONE", this area or surface receives no painter's finish.

3.09 PAINT FINISH TYPES

A. Interior:
   1. Paint Finish I-1 - New and Existing Interior Gypsum Board:
      Sherwin-Williams:
         (For Egg-Shel finish use: ProMar 200 Zero VOC Interior Latex Egg-Shel, B20-2600)

      PPG:
      1st Coat – PPG Paints 6-4900XI Speedhide Zero Interior Zero VOC Latex Sealer
      2nd Coat – PPG Paints 6-4510XI Speedhide Zero Interior Zero VOC Latex Semi-Gloss
      3rd Coat – PPG Paints 6-4510XI Speedhide Zero Interior Zero VOC Semi-Gloss
         (For Eggshell finish use PPG Paints 6-4310XI Speedhide Zero Interior Zero VOC Latex Eggshell)
2. **Paint Finish I-2** - New and Existing Interior Gypsum Board Ceilings:
   Sherwin-Williams:
   2nd Coat – S-W: ProMar 200 Zero VOC Interior Latex Enamel flat, B30-2600
   3rd Coat – S-W: ProMar 200 Zero VOC Interior Latex Enamel flat, B30-2600

   PPG:
   1st Coat – PPG Paints 6-4900XI Speedhide Zero Interior Zero VOC Latex Sealer
   2nd Coat – PPG Paints 6-4110XI Speedhide Zero Interior Zero VOC Latex Flat
   3rd Coat – PPG Paints 6-4110XI Speedhide Zero Interior Zero VOC Latex Flat

3. **Paint Finish I-3** - New and Existing Concrete Block
   Sherwin-Williams:
   (For Eg-Shel finish use: ProMar 200 Zero VOC Interior Latex Eg-Shel, B20-2600)

   PPG:
   1st Coat – PPG Paints 6-15 Speedhide Int/Ext Latex Block Filler
   2nd Coat – PPG Paints 6-4510XI Speedhide Zero Interior Zero VOC Latex Semi-Gloss
   3rd Coat – PPG Paints 6-4510XI Speedhide Zero Interior Zero VOC Latex Semi-Gloss

4. **Paint Finish I-4** – Exposed Roof Deck, Bar Joists, Ductwork, Sprinkler Piping, Water Piping, Gas Piping, and all exposed electrical conduit:
   Sherwin-Williams:
   Treat galvanized surfaces. Remove all grease and foreign materials prior to painting.
   Two coats (to cover) S-W: Low VOC Waterborne Acrylic Dryfall Flat, B42W81
   (White-B42W81, Black-B42B81)

   PPG:
   Treat galvanized surfaces. Remove all grease and foreign materials prior to painting Two coats (to cover) PPG Paints 6-725XI (White) or 6-723XI (Black) Speedhide Super Tech Interior Flat Fry-Fog.

5. **Paint Finish I-5** – Metal Work including Doors, Frames, Handrails, Trim, etc.
   Factory or shop primed items (Reference Article 3.02):
   Sherwin-Williams:
   1st Coat – S-W: Pro Industrial Pro-Cryl Universal Primer B66-310 (touch up only)

   PPG:
   1st Coat – PPG Paints 90-912 Pitt Tech Plus DTM Industrial Primer
   2nd Coat – PPG Paints 6-1510 Speedhide Int/Ext WB Semi-Gloss Alkyd Enamel
   3rd Coat – PPG Paints 6-1510 Speedhide Int/Ext WB Semi-Gloss Alkyd Enamel

3.10 **COLOR SELECTIONS**

A. **Walls:** Sherwin-Williams #SW7015 “Repose Gray” (Eggshell Finish)

B. **Elevator Doors/Frames:** Sherwin-Williams #SW7019 “Gauntlet Gray” (Semi-Gloss Finish)
C. Ceilings: Sherwin-Williams “Ceiling White” (Flat Finish)

END OF SECTION
PART 1 GENERAL

1.01 SECTION INCLUDES

A. Horizontal Baby Changing Stations and associated accessories.

1.02 QUALITY ASSURANCE


1.03 WARRANTY

A. Submit manufacturer's 5-year limited warranty on materials or workmanship and 5 year replacement warranty against vandalism agreeing to repair or replace unit that fails to perform as intended from date of substantial completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturers: Koala Kare Products, A Division of Bobrick, Englewood, CO, 1-888-733-3456 or 303-539-8300 or approved equivalent.

2.02 ACCEPTABLE PRODUCTS

A. Baby Changing Stations
   1. Horizontal Design Recessed Mount with Stainless Steel Finish (Model KB110-SSRE)

2.03 MATERIALS

A. Baby changing station body shall have 18 gauge, type 304 satin stainless steel exterior finish with high-density grey polyethylene interior. Design of unit shall be recess-mounted. Unit shall be equipped with a pneumatic cylinder for controlled opening and closing of bed. Bed shall be secured to back plate with a concealed, full-length steel-on-steel hinge. Unit shall have Microban® antimicrobial embedded into plastic material. No hinge structure shall be exposed on interior or exterior surfaces. Unit shall have 11-gauge steel mounting plates with mounting hardware included. Unit shall conform to ICC A117.1-2009 Accessible and Usable Buildings and Facilities, ASTM F 2285-04 Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use, ANSI Z535.4 Product Safety Signs and Labels, and ASTM G21 Antifungal Standards or local code if more stringent installation requirements are applicable for barrier-free accessibility. Unit shall comply with ADA regulations when properly installed. Bed shall have smooth concave changing area with a nylon safety strap and two hooks for bags or purses. Unit shall have a built-in Liner Dispenser for use with 3-ply chemical free biodegradable sanitary liners, universal instruction graphics and safety messages in 6 languages.
PART 3 - EXECUTION

3.01 PREPARATION

A. Provide templates and rough-in measurements as required.

3.02 INSTALLATION

A. Install in accordance with manufacturer's hardware and instructions.

B. Locate products to eliminate interference with door swings or use of fixtures in compliance with ADA regulations

C. For instructions on semi-recessed and custom installations, contact Koala Kare Products, Centennial, CO, (888) 733-3456 or 303-539-8300.

END OF SECTION
PART 1 GENERAL

1.01 SECTION INCLUDES
A. Room and door signs.
B. Interior directional and informational signs.

1.02 REFERENCE STANDARDS

1.03 SUBMITTALS
A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.
C. Signage Schedule: Provide information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.
   1. When room numbers to appear on signs differ from those on the drawings, include the drawing room number on schedule.
   2. When content of signs is indicated to be determined later, request such information from Owner through Architect at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
   3. Submit for approval by Owner through Architect prior to fabrication.
D. Samples: Submit two samples of each type of sign, of size similar to that required for project, illustrating sign style, font, and method of attachment.
E. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.
F. Verification Samples: Submit samples showing colors specified.
G. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

1.04 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING
A. Package signs as required to prevent damage before installation.
B. Package room and door signs in sequential order of installation, labeled by floor or building.
C. Store tape adhesive at normal room temperature.

1.06 FIELD CONDITIONS
A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.
B. Maintain this minimum temperature during and after installation of signs.

1.07 WARRANTY
A. Provide manufacturer’s warranty against defects in materials and workmanship for a minimum of 5 years per the date of substantial completion.
PART 2 PRODUCTS

2.01 MANUFACTURER

A. Signage shall be Fusion 51 “Quad” as manufactured by Takeform, 11601 Maple Ridge Road, Medina, NY. 14103. Voice: (800) 528-1398, www.takeform.net

B. Substitutions per the requirements of Section 01 6000.

2.02 SIGNAGE APPLICATIONS

A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1 2009, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.

B. Room and Door Signs:

C. Interior Directional and Informational Signs:

D. Evacuation Maps

2.03 SIGNAGE

A. Signage System:

1. The signage shall incorporate a decorative laminate face with applied graphics including all tactile requirements in adherence to ADA specifications.

2. All signs, including work station and room ID’s, overheads and flag mounts, directionals and directories shall have a matching appearance and constructed utilizing the same manufacturing process to ensure a consistent look throughout.

B. Materials:

1. Sign face shall be 0.035” (nominal) standard grade, high pressure surface laminate. A painted sign face shall not be acceptable.

2. The sign shall incorporate balanced construction with the core sandwiched between laminates to prevent warping. Laminate on the sign face only shall not be acceptable.

3. Tactile lettering shall be precision machined, raised 1/32”, matte PETG and subsurface colored for scratch resistance.

4. Signs shall incorporate a metal accent bar. Bars shall be anodized with a brushed satin finish. Painted bars shall not be acceptable. Refer to drawings.

C. Standard Colors:

1. Face/background color shall be standard grade, high pressure laminate, all colors and finishes. Refer to drawings. Color 1 to be Formica Citadel Wrap 5882-58. Color 2 to be Formica Black 909-58.

2. Standard tactile colors shall match manufacturer’s ADA standard color selection. Refer to drawings.

D. Construction:

1. The signage shall, with the exception of directories and directionals, be a uniform 8 ½” width to facilitate inserts printed on standard width paper.

2. Insert components shall have a .080 thickness non-glare acrylic window and shall be inlaid flush to sign face for a smooth, seamless appearance.

3. The signage shall include modules allowing for inserts, notice holders, occupancy sliders, marker, magnetic, and cork boards. All modules shall be flush to sign face for a smooth, seamless appearance.

4. The laminates (front and back) shall be pressure laminated and precision machined together to a 90-degree angle. Edges shall be smooth, void of chips, burrs, sharp edges and marks.

5. The signage shall utilize an acrylic sphere for Grade II Braille inserted directly into a scratch resistant, high pressure laminate sign face. Braille dots are to be pressure fit in high tolerance drilled holes.

6. Braille dots shall be half hemispherical domed and protruding a minimum 0.025”.

7. The signage shall utilize a pressure activated adhesive. The adhesive shall be nonhazardous and shall allow for flexing and deflection of the adhered components due to changes in temperature and
moisture without bond failure.
8. All signs shall be provided with appropriate mounting hardware. Hardware shall be finished and architectural in appearance and suitable for the mounting surface.
9. Some signs may be installed on glass. A blank backer is required to be placed on the opposite side of the glass to cover tape and adhesive. The backer shall match the sign in size and shape.

E. Printed Inserts:
1. The signage shall be capable of accepting paper or acetate inserts to allow changing and updating as required. Insert components shall have a 0.080” thickness non-glare acrylic window and shall be inlayed flush to sign face for a smooth, seamless appearance.
2. The Contractor shall provide and install all signage inserts.
3. Manufacturer shall provide a template containing layout, font, color, artwork and trim lines to allow Owner to produce inserts on laser or ink jet printer. The template shall be in an Acrobat or Word format (.pdf).

F. Quantities: Refer to Drawings

PART 3 EXECUTION

3.01 EXAMINATION
A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION
A. Install in accordance with manufacturer’s instructions.
B. Install neatly, with horizontal edges level.
C. Locate signs where indicated:
   1. Room and Door Signs: Locate as indicated per drawings.
D. Protect from damage until Substantial Completion; repair or replace damage items.

END OF SECTION
PART 1 GENERAL

1.01 SECTION INCLUDES

A. Solid Surface Toilet Compartments – overhead braced.
B. Solid Surface Urinal Screens – wall-hung.

1.02 REFERENCE STANDARDS

B. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate the work with placement of support framing and anchors in walls and ceilings.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.
B. Shop Drawings: Indicate partition plan, elevation views, dimensions, details, supports, door swings, reinforcements, etc.
C. Product Data: Provide data on panel construction, hardware, and accessories.
D. Samples: Submit two samples of partition panels, 4 x 4 inch in size illustrating panel finish, and color.
E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
F. Solid Surface Material Certification: Submit equivalency certification for tests and standards verification of material properties and characteristics for solid surface material used in product if other than Corian®.
G. Cleaning and Maintenance: Cleaning and maintenance information shall be provided by the manufacturer included with product shipment. Contractor is responsible to submit or forward the information to the Owner/Operator.

1.05 PROJECT CONDITIONS

A. Field Measurements: Verify all locations of walls, columns, ceilings, windows and other construction contiguous with toilet compartments by field measurements before fabrication and indicate measurements on Shop Drawings.
   1. Established Dimensions: Where field measurements cannot be made without delaying the work, establish dimensions and proceed with fabricating toilet compartments without field measurements. Coordinate wall, floor, ceilings and other contiguous construction to ensure that actual dimensions correspond to established dimensions.
B. Install materials under interior environmental conditions as close to final Building conditions as possible during construction process.
C. Inspect condition of all adjacent construction to accommodate proper installation of compartments. Notify Architect and Owner of conditions which may interfere with proper installation.
1.06 SHIPPING AND HANDLING

A. Manufacturer will provide photograph of condition of materials, packing and shipping preparation at the time of shipping.

B. Inspect at time of receipt at job site for changes of condition, packing or damage.

C. Store materials inside, protect from weather conditions greatly different from final installation conditions.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Solid Surface Toilet Compartments:
   2. Substitutions: Section 01 6000 - Product Requirements.

2.02 SOLID SURFACE UNITS

A. Panel Material: Homogeneous filled acrylic; not coated, laminated or of composite construction; meeting ANSI Z124.3 and 6, Type Six and Fed. Spec. WW-P-541E/Gen.
   1. Material shall have minimum physical and performance properties specified in the chart as stated in Section 2.02 paragraph D.
   2. Superficial damage to a depth of 0.010” shall be reparable by sanding.
   3. Material shall be ½” thick CORIAN® solid surface.

B. Pilaster Material: Homogeneous filled acrylic; not coated, laminated or of composite construction; meeting ANSI Z124.3 and 6, Type Six and Fed. Spec. WW-P-541E/Gen.
   1. Material shall have minimum physical and performance properties specified in the chart as stated in Section 2.02 paragraph D.
   2. Superficial damage to a depth of 0.010” shall be reparable by sanding.
   3. Material shall be 1” thick CORIAN® solid surface for pilasters and vertical door edges and ½” for all other components.

C. Urinal Screen Material: Homogeneous filled acrylic; not coated, laminated or of composite construction; meeting ANSI Z124.3 & 6, Type Six and Fed. Spec. WW-P-541E/Gen.
   1. Material shall have minimum physical and performance properties specified in the chart as stated in Section 2.02 paragraph D.
   2. Superficial damage to a depth of 0.010” shall be reparable by sanding.
   3. Material shall be ½” thick CORIAN® solid surface.

D. Color: Silver Birch
E. Performance Requirements – DuPont™ Corian solid surface standard

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<thead>
<tr>
<th>PROPERTY</th>
<th>REQUIREMENT (min/max)</th>
<th>TEST PROCEDURE</th>
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<tbody>
<tr>
<td>Tensile Strength</td>
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<td>ASTM D638</td>
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<tr>
<td>Flexural Strength</td>
<td>7000 psi min</td>
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<td>Hardness</td>
<td>90 Rockwell “M” Scale min.</td>
<td>ASTM D785</td>
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<td>52 Barcol Impessor min.</td>
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<td>Color Stability</td>
<td>No Change-200 hrs. min.</td>
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<tr>
<td>Wear and Cleanability</td>
<td>Passes ANSI Z 124.3</td>
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<tr>
<td>Abrasion Resistance</td>
<td>No loss of pattern</td>
<td>NEMA LD3-3.10</td>
</tr>
<tr>
<td></td>
<td>Wt. Loss (1,000 cycles)=0.9 gm max</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wear (10,000 cycles)=.008” max</td>
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</tr>
<tr>
<td>Impact Resistance</td>
<td>Notched Izod</td>
<td>ASTM D 256 (Method A)</td>
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<td>Gardner</td>
<td>.24 ft. lbs./in. of notch min.</td>
<td>ASTM D 3029</td>
</tr>
<tr>
<td>Drop Ball</td>
<td>9.0 ft. lbs. Min.</td>
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<td>½” (13 mm) sheet</td>
<td>&gt;144” w ½ lb ball, no failure</td>
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<td>Stain Resistance</td>
<td>Passes ANSI Z 124.3</td>
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<tr>
<td>Fungi and Bacteria</td>
<td>No Attack</td>
<td>ATM G 21, G22</td>
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<td>Flammability</td>
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<td>ASTM E84</td>
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<tr>
<td>Flame Spread</td>
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<td>Smoke Development</td>
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<td>Pittsburgh Protocol Toxicity (as used by NY State)</td>
<td>Solid colors 80 grams min.</td>
<td>&quot;LG 50&quot; Test</td>
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F. Brackets (Fittings)
1. Continuous U-brackets stainless steel
   All brackets and fitting are fully concealed by Corian® trim.

2.03 ACCESSORIES

A. Hardware and Accessories: Manufacturer’s standard design, heavy duty operating hardware and accessories, stainless steel.

B. Overhead Bracing: Manufacturer’s standard continuous steel clad with matching solid surface material with anti-grip profile.

C. Anchorages and fasteners: Manufacturer’s standard concealed fasteners of high strength steel. Provide pins for through-bolt applications. Recommended wall and floor anchorage to be supplied by installer.
1. Pads of honeycomb paper expanded to 1 inch maximum cell size, with cell walls of 26 lbs. per 1000 square feet minimum, processed with flanged edges and uniform expansion, or faced with Kraft paper both sides for adhesion.

2.04 FABRICATION

A. Overhead-Braced Units: Provide recommended manufacturer’s standard corrosion-resistant supports, leveling mechanism, fasteners and anchors at pilasters to suit floor conditions. Make
provisions for setting and securing continuous head rail of each pilaster. Provide shoes at pilasters to conceal leveling mechanism and anchorage.

B. Doors: Unless otherwise indicated, provide 24 inch wide in-swing doors for standard toilet compartments and 36 inch wide out-swing doors with a minimum 32 inch wide clear opening for compartments indicated to be accessible to people with disabilities.

1. Hinges: Manufacturer’s standard stainless steel, continuous, reversible, fully concealed with the exception of hinge knuckle, self closing to hold doors open approx. 30 degrees with emergency quick access feature.

2. Latch and Keeper: Manufacturer’s standard surface mounted stainless steel latch unit designed for emergency access with a combination rubber faced door strike. Provide units that comply with requirements of authorities having jurisdiction at compartments indicated to be accessible to people with disabilities.

3. Door Pull: Manufacturer’s recommended standard unit at out-swing doors that complies with accessibility requirements of authorities having jurisdiction. Provide units on both sides of doors at compartments indicated to be accessible to people with disabilities.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that field measurements are as indicated.

C. Verify correct spacing of and between plumbing fixtures.

D. Verify correct location of built-in framing, anchorage, and bracing.

E. Preparation: Perform all preparation required for satisfactory installation.

3.02 INSTALLATION

A. Install partitions secure, rigid, straight, plumb, and level in accordance with manufacturer’s instructions.

B. Maximum Clearances:

   1. Door and Pilasters – 1/4”
   2. Panels at Walls and Pilasters - Flush

C. Attach panel brackets securely to walls using anchor devices.

D. Attach panels and pilasters to brackets.

E. Secure pilasters to floor and level, plumb and tighten. Secure continuous head rail to each pilaster with not less than two fasteners. Hang doors to align parallel with pilasters when doors are in the closed position.

F. Erect compartments with the bottom of doors level with the bottom of pilasters when the doors are closed

G. Wall-Hung Urinal Screens: Secure continuous bracket to wall using manufacturer’s recommended anchorage and secure screen to bracket. Level, plumb and tighten screen.

3.03 TOLERANCES

A. Maximum Variation From True Position: 1/4 inch.

B. Maximum Variation From Plumb: 1/8 inch.
3.04 ADJUSTING

A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 1/4 inch.

B. Adjust hinges to position doors in partial opening position when unlatched. Return out swinging doors to closed position.

C. Adjust adjacent components for consistency of line or plane.

3.05 CLEAN UP

A. Installer is responsible for final cleanup and wipe down of all panels, screens, pilasters and doors in accordance with the care and maintenance instruction provided by manufacturer.

END OF SECTION
PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the following:
   1. Fire extinguishers.
   2. Fire extinguisher cabinets.
   3. Accessories

1.02 REFERENCES


1.03 SUBMITTALS

A. Product data for cabinets include rough-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type and materials, trim style, door construction, panel style, and materials.

1.04 QUALITY ASSURANCE

A. Single-Source Responsibility: Obtain extinguishers and cabinets from one source from a single manufacturer.

B. UL-Listed Products: Fire extinguishers shall be UL listed with UL listing mark for type, rating, and classification of extinguisher.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. J. L. Industries.
   2. Larsen's Manufacturing Co.
   3. Modern Metal Products.
   4. Potter-Roemer.
   5. Samson Products.

2.02 FIRE EXTINGUISHERS

A. General: Provide fire extinguishers for fire extinguisher and fire hose cabinets and other locations indicated, in colors and finishes selected by Architect-Engineer from manufacturer's standard, that comply with authorities having jurisdiction.

B. Multipurpose Dry Chemical Type: (FE) UL-rated 4-A:80-B:C, 10-lb nominal capacity, in enameled steel container equivalent to Larsen's Model Number MP-10 in locations as indicated on drawings.
2.03 MOUNTING BRACKETS (FE)

A. Brackets: Designed to prevent accidentally dislodging extinguisher, of sizes required for type and capacity of extinguisher indicated, in plated finish.
   1. Provide brackets for extinguishers not located in cabinets.

B. Identify bracket-mounted extinguishers with FIRE EXTINGUISHER in red letter decals applied to wall surface. Use letter size, style, and location as selected by Architect.

2.04 CABINETS

A. Construction: Manufacturer's standard stainless steel box, with trim, frame, door, and hardware to suit cabinet type, and door style indicated. Weld joints and grind smooth. Miter and weld perimeter door frames.

B. Fire-Rated Cabinets: UL listed with UL listing mark with fire-resistance rating of wall where it is installed.

C. Cabinet Type: Semi-recessed fire extinguisher cabinet each with MP-10 fire extinguisher (FE) as indicated in 2.02. Suitable for containing the following:
   1. FEC: Locations as indicated on drawings.

D. Door Material and Construction: Equivalent to Larsen's Architectural Series Model Number SS2409-6R.

E. Door Style: Manufacturer's standard design.
   1. Solid Stainless Steel door in #4 finish with "Larsen-loc."

F. Door Hardware: Provide manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated. Provide either lever handle with cam-action latch, or exposed or concealed door pull and friction latch. Provide concealed or continuous-type hinge permitting door to open 180 deg.

2.05 FINISHES FOR CABINETS, GENERAL

A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying temporary strippable protective covering prior to shipping.

2.06 STEEL CABINET FINISHES

A. Surface Preparation: Solvent-clean surfaces complying with SSPS-SP 1 to remove dirt, oil, grease, and other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5 (white metal blast cleaning) or SSPC-SP 8 (pickling).

B. Factory Finish: Apply shop primer specified below immediately following surface preparation and pretreatment.
   1. Shop Primer: Manufacturer's or fabricator's standard fast-curing, lead-free, universal primer, selected for resistance to normal atmospheric corrosion, for compatibility with substrate and finish paint system indicated.
2. Final Finish: Manufacturer's standard shop applied epoxy finish.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine walls and partitions for thickness and framing for cabinets to verify cabinet depth and mounting prior to cabinet installation.

B. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Follow manufacturer's printed instructions for installation.

B. Install in locations indicated with top of cabinet at 5 feet above finished floor or at heights to comply with applicable regulations of governing authorities.
   1. Fasten mounting brackets and cabinets to structure, square and plumb.

END OF SECTION
PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes toilet and bath accessory items as scheduled and indicated on drawings.
   1. Refer to Paragraph 3.05 “Toilet Accessory Schedule” as some accessory items are provided by the Owner and installed by the General Contractor.

1.02 REFERENCES


D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

E. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.


1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with the placement of internal wall reinforcement and reinforcement of toilet partitions to receive anchor attachments.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on accessories describing size, finish, details of function, attachment methods.

C. Shop Drawings: Construction details, anchoring and mounting requirements, including requirements for cutouts in other work and substrate preparation.
D. Project Schedule: Indicating types, quantities, sizes and installation locations by room of each accessory required.
   1. Identify locations using room designations indicated on Drawings.
   2. Identify products using designations indicated on Drawings.

E. Samples: Submit one sample of each accessory, illustrating color and finish if requested by Architect. Samples will be returned and can be incorporated into the Work.

F. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

1.05 REGULATORY REQUIREMENTS

A. Conform to the requirements of the 2010 Americans with Disabilities Act (ADA) and ICC/ANSI A117.1-1998, in conjunction with Chapter 11 of 2012 IBC.

1.06 COORDINATION

A. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities and for proper installation, adjustment, operation, cleaning and servicing of accessories.

B. Deliver inserts and anchoring devices set into concrete or masonry as required to prevent delaying the Work.

1.07 QUALITY ASSURANCE

A. Inserts and Anchorages: Furnish accessory manufacturers' standard inserts and anchoring devices that must be set in concrete or built into masonry. Coordinate delivery with other work to avoid delay.

B. Single-Source Responsibility: Provide products of same manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise acceptable to Architect-Engineer.

1.08 WARRANTY

A. Special Warranty: Warrant mirrors for 15 years against silver spoilage.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS: These items are to be provided and installed by the General Contractor (CFCI)

A. Manufacturers: Subject to compliance with requirements, provide toilet accessories by:
   2. American Specialties, Inc.
   5. General Accessory Manufacturing Co.
   6. Substitutions: See Section 01 6000
2.02 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete
with anchors and fittings, steel anchor plates, adapters, and anchor components for
installation.
  1. Grind welded joints smooth.
  2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.

B. Keys: Provide 2 keys for each accessory to Owner; master key all lockable accessories.

C. Stainless Steel Sheet: ASTM A666, Type 304.

D. Galvanized Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with
G90/Z275 coating.

E. Mirror Glass: Float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective
and physical characteristics complying with ASTM C1503. 1/4-inch-thick glass complete with
silvering, copper coating and protective organic coating; silvering of pure silver, free of pinholes
or other defects visible to the naked eye; two-coat abrasion resistant baked on protective
coating; as manufactured by Guardian Industries Corp., or as approved.

F. Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof, security type.

G. Where exposed fasteners are permitted, provide oval head fasteners with finish matching
accessory.

H. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for
component and substrate.

2.03 FINISHES

A. Stainless Steel: No. 4 satin brushed finish, unless otherwise noted.

B. Chrome/Nickel Plating: ASTM B456, satin finish, unless otherwise noted.

C. Back paint components where contact is made with building finishes to prevent electrolysis.

2.04 MIRRORS: (CFCI)

A. Stainless Steel, Welded, Angle Frame Mirrors:
     a. Overall Size: 24 inches (610 mm) W x 36 inches (914 mm) H.
  2. Angle Frame:
     a. Materials: Type 304 stainless steel angle 3/4 inch x 3/4 inch (19 x 19 mm), with satin
finish with vertical grain on exposed surfaces.
     b. Construction: One-piece, roll-formed construction with continuous integral stiffener.
     c. Design: Beveled design on front of angle to hold mirror tightly against frame; prevents
exposure to sharp edges.
     d. Corners: Heliarc welded, ground, and polished smooth.
  3. Mirror:
     a. No. 1 quality, 1/4 inch (6 mm) float/plate glass.
     b. Edges: Protected with plastic filler strips.
     c. Back of Mirror: Protected by full-size, shock-absorbing, water-resistant, non-abrasive
3/16 inch (5 mm) thick polyethylene padding.

4. Mounting: Removable, galvanized steel back with integral horizontal hanging brackets located at top and bottom for mounting on Concealed one-piece rectangular wall hanger(s); galvanized steel back fastened to frame with Concealed screws to permit glass replacement; attachment by rivets or tabs is not acceptable; Concealed Phillips head locking setscrews secure mirror to wall hanger in bottom of frame.

2.05 GRAB BARS: (CFCI)

A. Stainless Steel Grab Bars: With snap flange covers:
   1. Satin Finish:
         1) Length: 36 inches (914 mm).
      b. Basis of Design: Bobrick Model B-6806X42.
         1) Length: 42 inches (1067 mm).
   2. Compliance: Accessibility guidelines (including ADAAG) for structural strength.
      a. Capacity: Designed to support 900 lbs (408 kg) in compliant installations.
   3. Description: Clearance between grab bar and finished wall is 1-1/2 inches (38 mm).
   5. Grab Bar Construction: 18 gauge (1.2 mm), ends heliarc welded to flanges.
   6. Outside Diameter: 1-1/2 inch (38 mm).
   7. Mounting Flanges: Concealed, 18-8, Type 304, 1/8 inch (3 mm) thick, stainless steel plate.
      a. End Flanges: 2 inches x 3-1/8 inches (50 mm x 80 mm) with two holes for attachment to wall.
      b. Intermediate Flanges: 2-5/8 inches x 3-1/8 inches (65 mm x 80 mm) wide x 3-1/8 inch (80 mm) diameter.
   8. Snap Flange Covers: 18-8, Type 304, 22 gauge (0.8 mm) drawn stainless steel with satin finish, 3-1/4 inch (85 mm) diameter x 1/2 inches (13 mm) deep; snap over mounting flange to conceal mounting screws.
   9. Mounting Accessories: Provide the following optional mounting accessories as scheduled and indicated on the Drawings and as required for complete installation.
      a. Mounting Kits: Provide optional Bobrick Part No. 252-30 Mounting Kit; 3 Type 304 stainless steel, Phillips round-head, sheet-metal screws for each flange.
      b. Grab Bar Fasteners: Provide optional Bobrick Part No. 251-4 WingIt Grab Bar Fastener; round-head, Phillips 18/8 stainless steel screws and grab bar fastener.
      c. Anchor Devices: Provide optional Bobrick Part No. 2583 Optional Mounting Kit; for 3/4 inch to 1 inch (19 mm to 25 mm) panels.
      d. Anchor Devices: Provide optional Bobrick Part No. 2586 Optional Mounting Kit; for 1/2 inch (13 mm) panels.

2.06 COAT HOOKS: (CFCI)

A. Stainless Steel Clothes Hooks:
      a. Finish: Bright polish.
   2. Materials: All-welded 18-8, Type 304, 11 gauge (3.2 mm) stainless steel with satin finish.
   3. Projection from Wall: 1-1/8 inch (30 mm).

2.07 CUSTODIAL/JANITORIAL ACCESSORIES: (CFCI)

A. Utility Shelf With Mop and Broom Holders and Rag Hooks:
   1. Basis of Design: Bobrick Model, B-224X36; with 4 mop/broom holders and 3 rag hooks.
   2. Shelf: 18-8, Type 304, 18 gauge (1.2 mm) stainless steel with satin finish; 8 inches (203 mm) deep, 1-1/2 inch (38 mm) return edge.
3. Length: 36 inches (915 mm).
4. Mounting Brackets: Welded to shelf, 18-8, Type 304, 18 gauge (1.2 mm) stainless steel with satin finish.
5. Mop and Broom Holders: Replaceable, spring-loaded rubber cams with anti-slip coating; accommodates handles from 7/8 inch to 1-1/4 inch (20 mm to 30 mm) in diameter; with plated steel retainers.
6. Rag Hooks: 18-8, Type 304, 16 gauge (1.6 mm) stainless steel with satin finish; secured to shelf with rivets.
7. Drying Rod: 18-8, Type 304, 1/4 inch (6 mm) diameter stainless steel with satin finish.

2.08 ITEMS TO BE FURNISHED BY THE OWNER AND INSTALLED BY THE GENERAL CONTRACTOR (OFCI)

A. Paper Towel Dispensers
   1. Action Chemical Brown Rolled Dispenser Model Number #TD0220-01

B. Hand Soap Dispenser
   1. Action Chemical Model Number 95458

C. Hand Sanitizer Dispenser
   1. Action Chemical Model Number CLO-01752

D. Toilet Tissue Dispenser
   1. Action Chemical Model Number PF-R27TS

E. Toilet Seat Cover Dispenser
   1. Action Chemical Model Number L-BWK-KD100

F. Trash Receptacle
   1. Action Chemical Model Number RCP-8180-88BEI

G. Urinal Mats
   1. Action Chemical Model Number RE-1452CGR

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. Verify that field measurements are as indicated on drawings.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.
3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer.

B. Install grab bars such that a vertical or horizontal force of 250 pounds must be able to be applied at any point on the grab bar, fastener, mounting device, or supporting structure without failure.

C. Install plumb and level, securely and rigidly anchored to substrate.

D. Mounting Heights and Locations: As required by accessibility regulations and as indicated on drawings.

3.04 ADJUSTING AND CLEANING

A. Adjust accessories for unencumbered, smooth operation. Replace damaged or defective items.

B. Remove temporary labels and protective coatings.

C. Clean and polish exposed surfaces according to manufacturer's written recommendations.

3.05 TOILET ACCESSORY SCHEDULE

<table>
<thead>
<tr>
<th>Plan Designation</th>
<th>Description</th>
<th>Model Number</th>
<th>Provided and Installed By: *</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB</td>
<td>Grab Bar</td>
<td>Bobrick B-6806 x 42&quot;</td>
<td>CFCI</td>
</tr>
<tr>
<td>GB-1</td>
<td>Grab Bar</td>
<td>Bobrick B-6806 x 36&quot;</td>
<td>CFCI</td>
</tr>
<tr>
<td>GB-2</td>
<td>Grab Bar</td>
<td>Bobrick B-6806 x 18&quot;</td>
<td>CFCI</td>
</tr>
<tr>
<td>MR</td>
<td>Mirror</td>
<td>Bobrick B290-2436</td>
<td>CFCI</td>
</tr>
<tr>
<td>MBH</td>
<td>Mop and Broom Holder</td>
<td>Bobrick B-224 x 36&quot;</td>
<td>CFCI</td>
</tr>
<tr>
<td>CH</td>
<td>Coat Hook</td>
<td>Bobrick B-672</td>
<td>CFCI</td>
</tr>
<tr>
<td>PTD-1</td>
<td>Paper Towel Dispenser</td>
<td>Action Chemical TD0220-01</td>
<td>OFCI</td>
</tr>
<tr>
<td>SD</td>
<td>Hand Soap Dispenser</td>
<td>Action Chemical DEB-95458</td>
<td>OFCI</td>
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<td>HSD</td>
<td>Hand Sanitizer Dispenser</td>
<td>Action Chemical CLO-01752</td>
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<tr>
<td>TTD</td>
<td>Toilet Tissue Dispenser</td>
<td>Action Chemical PF-R27TS</td>
<td>OFCI</td>
</tr>
<tr>
<td>TSD</td>
<td>Toilet Seat Cover Dispenser</td>
<td>Action Chemical L-BWK-KD100</td>
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<tr>
<td>TR</td>
<td>Trash Receptacle</td>
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<tr>
<td>UM</td>
<td>Urinal Mat</td>
<td>Action Chemical RE-1452CGR</td>
<td>OFCI</td>
</tr>
</tbody>
</table>

*"CFCI" indicates Contractor Furnished Contractor Installed

*"OFCI" indicates Owner Furnished Contractor Installed

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes the following toilet accessories for detention applications:
   1. Miscellaneous detention toilet accessories.
   2. Security mirrors.

1.03 SUBMITTALS

A. General: Submit the following according to Conditions of Contract and Division 1 Specification Sections.

B. Product Data: For each type of product indicated.

C. Shop Drawings: For each type of product. Include plans, elevations, sections, details, and attachments to other Work.

D. Coordination Drawings: Drawings of each built-in anchor supporting detention toilet accessories, including those to be installed as work of other Sections, drawn to scale and coordinating anchorage with detention toilet accessories. Show the following:
   1. Locations, dimensions, and profiles of wall and floor reinforcements.
   2. Locations and installation details of built-in anchors.
   3. Elevations of each detention toilet accessory showing dimensions of accessory, preparations for receiving anchors, and locations of anchorage.
   4. Details of attachment of each detention toilet accessory to built-in anchors.

E. Product Schedule: Indicate types, quantities, sizes, and installation locations by room of each accessory required. Use detention toilet accessory designations indicated in this Section and on drawings and room designations indicated on Drawings.

F. Maintenance Data: Provide parts listing and maintenance data for each toilet accessory to include in Operation and Maintenance Manuals required by Division 1 Section “Project Closeout.”

1.04 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of detention toilet accessory through one source from a single manufacturer.

B. Welding: Qualify procedures and personnel according to the following:
   1. AWS D1.1, “Structural Welding Code—Steel.”
   3. AWS D1.6, “Structural Welding Code—Stainless Steel.”
1.05 SEQUENCING AND SCHEDULING

A. Coordinate installation of anchorages for detention toilet accessories. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

B. Coordinate wall construction to ensure that actual opening dimensions correspond to dimensions required for recessed detention toilet accessories.

1.06 MAINTENANCE

A. Tool Kit: Provide three sets of tools for use with security fasteners, each packaged in a compartmented kit configured for easy handling and storage.

B. Extra Materials: Security Fasteners: Furnish not less than 20 fasteners or fraction thereof, of each type and size of security fastener installed, individually packaged by type and labeled.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

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.

2.02 MATERIALS

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

B. Steel Sheet: ASTM A 569/A 569M.

C. Stainless-Steel Sheet, Strip, and Plate: ASTM A 666, Type 304 or Type 430.

D. Security Fasteners: Operable only by tools produced for use on specific type of fastener by fastener manufacturer or other licensed fabricator. Drive system type, head style, material, and protective coating as required for assembly, installation, and strength, and as follows:
   1. Drive System Types: Pinned Torx-Plus or pinned Torx.
   2. Socket Flat Countersunk Head Fasteners:
      b. Stainless steel, ASTM F 879 (ASTM F 879M), Group 1 CW.
   3. Socket Button Head Fasteners:
      b. Stainless steel, ASTM F 879 (ASTM F 879M), Group 1 CW.
   4. Socket Head Cap Fasteners:
      b. Stainless steel, ASTM F 837 (ASTM F 837M), Group 1 CW.
   5. Protective Coatings for Heat-Treated Alloy Steel:
      a. Zinc chromate, ASTM F 1135, Grade 3 or 4; for exterior applications and interior applications where indicated.
6. Acceptable Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Camcar Textron, Inc.
   b. Holo-Krome; a Danaher Corporation.
   c. Safety Socket Screw Corporation.
   d. Tamper=Pruf Screws, Inc.
   e. Tanner Bolt & Nut Co.

E. Concealed Bolts: ASTM A 307, Grade A, unless otherwise indicated.

F. Cast-in-Place Anchors in Concrete: Anchors of type indicated below, fabricated from corrosion-resistant materials capable of sustaining, without failure, a load equal to 5 times the load imposed, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
   1. Threaded or wedge type; galvanized ferrous casting, either ASTM A 47 (ASTM A47M) malleable iron or ASTM A27/A 27M cast steel. Provide bolts, washers, and shims as needed, hot-dip galvanized per ASTM A 153/A 153M.

G. Embedded Plate Anchors: Fabricated from steel shapes and plates, minimum 3/16 inch (4.8 mm) thick; with minimum ½-inch (12.7-mm) diameter headed studs welded to back of plate.

H. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

203 MANUFACTURED UNITS

A. Detention Mirrors
   1. Integrierlly Framed Detention Mirror with Round Corners: Minimum 11 ¼” inches wide by 17 ¼” inches high; with mirror and integral frame formed from minimum 0.032-inch (0.8-mm) thick, stainless-steel; with round corners.
      a. Finish: No. 8 for mirror; No. 4 for frame.
      b. Mounting: Front mounting with security fasteners.
      c. Acceptable Products:
         3) Bobrick Washroom Equipment, Inc.; Stainless Steel Frameless Mirror, B-942.
         4) McKinney/Parker Washroom Accessories Corp.; Surface Mounted Integral Frame Security Mirror, Model No. 565FM.
         5) Willo Products Company, Inc.; One Piece Stainless Steel Mirror, #862.
         6) Bradley; Security Framed Wall Mirror #SA05.
         7) Peterson Enterprises, Inc.; Large One Piece Mirror #M1001.

B. Detention Grab Bars
   1. Security grab bars with exposed mounting: 1-1/2 inc (40 mm) diameter by 0.053-inch (1.3 mm) thick stainless steel tubing with 1/8 inch (3 mm) thick flanges welded to ends. Bottom of bar to have nominal 0.093-inch (2.3 mm) thick stainless steel shelf, spot welded to bottom of bar.
      a. Mounting: Wall mounted with security fasteners.
      b. Acceptable Manufacturers:
         1) American Specialties, Inc.; Security grab bars, 106 Series.
         2) Bobrick Washroom Equipment, Inc.; Security grab bar with exposed mounting, 813660 series.
4) Bradley; Security Grab Bars, #SA70.
   2. Where grab bars are required to be “L” or “U” shaped, field verify length required to fit grab bar in space, prior to fabrication.

2.04 FABRICATION

A. Coordinate dimensions and attachment methods of detention toilet accessories with those of adjoining construction to product integrated assemblies with closely fitting joints and with edges and surfaces aligned, unless otherwise indicated.

B. Shear and punch metals cleanly and accurately. Remove burrs.

C. Form edges and corners to be free of sharp edges and rough areas. Fold back exposed edges of unsupported sheet metal to form a ½-inch (13-mm) wide hem on the concealed side, or ease edges to a radius of approximately 1/32 inch (1 mm) and support with concealed stiffeners.

D. Form metal in maximum lengths to minimize joints. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

E. Weld corners and seams continuously to comply with referenced AWS standard and the following:
   1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   2. Obtain fusion without undercut or overlap.
   3. Remove welding flux immediately.
   2. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
   3. Weld before finishing components to greatest extent possible. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

F. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure detention toilet accessories rigidly in place and to support expected loads. Build in straps, plates, and brackets as needed to support and anchor fabricated items to adjoining construction. Reinforce formed-metal units as needed to attach and support other construction.

G. Cut, reinforce, drill, and tap detention toilet accessories to receive hardware, security fasteners, and similar items.

H. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.

I. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use exposed security fasteners of type indicated or, if not indicated, flat-head (countersunk) security fasteners. Locate joints where least conspicuous.

J. Finishes
   1. Comply with NAAMM’s “Metal Finishes Manual for Architectural and Metal Products” for recommendations for applying and designating finishes.
   2. Finish detention toilet accessories after assembly.
   3. Stainless-Steel Finishes: Remove tool and die marks and stretch lines or blend into finish.
a. Grind and polish surfaces to product uniform, directionally textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.

b. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of detention toilet accessories.

1. Examine roughing-in for embedded and built-in anchors to verify actual locations of detention toilet accessory connections before detention toilet accessory installation.

2. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of detention toilet accessories.

B. Inspect built-in and cast-in anchor installations before installing detention toilet accessories to verify that anchor installations comply with requirements. Prepare inspection reports.

1. Remove and replace anchors where inspections indicate that they do not comply with specified requirements. Reinspect after repairs or replacements are made.

2. Perform additional inspections to determine compliance of replaced or additional work. Prepare inspection reports.

C. Verify locations of detention toilet accessories with those indicated on Coordination Drawings.

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

3.02 INSTALLATION

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing detention toilet accessories to in-place construction. Include threaded fasteners for concrete and masonry inserts, security fasteners, and other connectors.

B. Provide temporary bracing or anchors in formwork for items that are to be built into concrete or masonry or similar construction.

C. Security Fasteners: Install detention toilet accessories using security fasteners with head style appropriate for installation requirements, strength, and finish of adjacent materials, except that a maximum of two different sets of tools shall be required to operate security fasteners for Project. Provide stainless-steel security fasteners in stainless-steel materials.

3.03 ADJUSTING AND CLEANING

A. Remove temporary labels and protective coatings.

B. Adjust safety hooks to release with application of 8-lbf (35.6-N) load.
### DETENTION TOILET ACCESSORY SCHEDULE

<table>
<thead>
<tr>
<th>PLAN DESIGNATION</th>
<th>DEFINITION</th>
<th>DESCRIPTION</th>
<th>MANUFACTURER</th>
</tr>
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<tbody>
<tr>
<td>DMR</td>
<td>Mirror</td>
<td>SA05</td>
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<tr>
<td>DMR-1</td>
<td>H.C. Mirror</td>
<td>SA06</td>
<td></td>
</tr>
<tr>
<td>DGB</td>
<td>Security Grab Bar x 42 inches long</td>
<td>SA70 x 42</td>
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<tr>
<td>DGB-1</td>
<td>Security Grab Bar x 36 inches long</td>
<td>SA70 x 36</td>
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</tr>
</tbody>
</table>

*Manufacturer and products listed as point of reference only.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and provisions of contract, including General and Supplementary Conditions and Division 1 specification Sections apply to Work in this Section.

1.02 SUMMARY

A. This Section includes the following:
   1. Mechanical Detention Hardware for Swinging Doors.
   2. Miscellaneous Hardware for Detention Doors.
   3. Hardware Schedule for Detention Doors.

1.03 SUBMITTALS

A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections. All submittals shall be supplied electronically or on USB drive.

B. Product Data: Manufacturer's printed product data and catalog cuts indicating product characteristics, performance and limiting criteria.

C. Shop Drawings: For each type of hardware item: Include plans, wiring diagrams, method of construction, installation and attachment details and other information necessary to show compliance with requirements.

D. Samples: Provide samples of each item of security hardware item as requested by the Architect-Engineer. Samples shall be shipped as directed, to the location as directed, and shall be shipped within 10 days of receipt of notification of the requirement to provide samples. In addition, if required, provide hardware for all mockups. All mockups shall be fully functional, prior to Architect’s inspection.

E. Hardware schedule coordinated with doors, frames, and related work to ensure proper size, thickness, hand and function of door hardware.
   1. Hardware Schedule Content: Based on hardware indicated, organize schedule into “hardware sets” indicating complete designations of every item required for each door or opening. Include the following information:
      a. Type, style, exact function, size, and finish of each hardware item.
      b. Name and manufacturer of each item.
      c. Fastenings and other pertinent information.
      d. Location of each hardware set cross-referenced to indications on Drawings both on floor plans and in door and frame schedule.
         1) Door numbers and frame types in schedule to match door numbers and frame types shown on drawings.
         2) Hardware sets shall match specified hardware sets found at the end of this specification section. Hardware set extensions (i.e.: "sh1.a") used to signify hardware sets with additional hardware requirements are acceptable.
      e. Explanation of all abbreviations, symbols, and codes contained in schedule.
      f. Mounting locations for hardware.
      g. Door and frame sizes and materials.

   2. Submittal Sequence: Submit schedule at earliest possible date, particularly where acceptance of Hardware Schedule must precede fabrication of other work that is critical in
the Project construction schedule. Include with schedule the product data, shop drawings of other work affected by door hardware, and other information essential to the coordinated review of schedule.

F. Keying Schedule: A keying schedule shall be provided at the time of detention hardware submittal review.

G. Submittal of written confirmation from the hardware manufacturer showing individual field technicians as approved installers shall be required.

H. Operating/Maintenance Manuals: Furnish O&M Manuals, as outlined in Division 1 and 11, for all security hardware and all security locking devices. Provide detailed parts lists and cut sheets for all items with mechanical moving parts on the approved security hardware schedule. These manuals shall include instructions for the care of the materials, parts list to aid the Owner in ordering replacement parts, as well as instructions for contacting the appropriate personnel not only during the warranty period, but beyond. Manuals shall also include the final approved key schedule and "as built" shop drawings of all components.

1.04 DELIVERY, STORAGE AND HANDLING

A. Packing and Marking: Each piece of security hardware furnished under this Section shall be packaged and marked according to the hardware set and door number listed in the approved hardware schedule.

B. Deliver all components cartoned or crated to provide protection during transit and job storage.

C. Inspect all components upon delivery for damage. Damages may be repaired, provided the repaired items are equal in all respects to new work and acceptable to the Architect-Engineer; otherwise, remove and replace damaged items as directed.

D. Store all components in a locked storage area. Do not store any materials directly on the ground or concrete. Provide adequate ventilation and protection to insure materials are kept dry, clean and secure. Store all materials in the manner and order as prescribed by the manufacturer.

1.05 COORDINATION

A. Examine the drawings and specifications of other trades whose work may influence the installation and/or operation of the detention hardware. Prior to the start of work, review the project drawings and specifications and coordinate work with all other trades and Divisions of the Specifications affecting Work of this Section.

1. Responsibilities for electrical and mechanical hardware installation shall include the following:
   a. Furnish and install door locks and hardware accessories as scheduled herein.

1.06 MAINTENANCE

A. Contractor shall furnish spare parts required in each section, packaged to protect parts from damage and to allow for easy storage.

B. Supplier of equipment shall stock replacement parts for each system and be able to replace any part of the system within 24 hours.
C. Provide spare door hardware parts as follows:
   1. Hinges: 3 sets (9 total)
   2. Closers: 1 each hand, type and size used
   3. Furnish the following material:
      a. One (1) each of all locks – per hand - specified (less cylinder).
      b. All parts shall be packaged and labeled to provide for long term storage.

PART 2 - PRODUCTS

2.01 GENERAL

A. Detention design criteria are based upon the requirements and features of the products listed herein. The use of one manufacturer's numeric designation does not imply other manufacturer's products will not be accepted.

B. Fire Rated Openings: Provide hardware for fire-rated openings in compliance with NFPA Standard 80. This requirement takes precedence over other requirements for such hardware. Provide only hardware which has been tested and listed by UL, bears appropriate label or symbol for the types and sizes of doors required and compliance with the requirements of the required label and function of the opening wherever possible.

2.02 MISCELLANEOUS HARDWARE FOR SECURITY DOORS

A. Acceptable Manufacturers
   1. Except as otherwise specified herein, the equipment and materials of this section shall be products manufactured by one of the listed manufacturers.

B. Products/Manufacturers
   1. Hinges: Southern Folger, R.R. Brink, Portland, Northwest Specialty Hardware, Airteq
   2. Pulls: Southern Folger, R.R. Brink, Airteq
   4. Door Closers: LCN
   5. Door Stops: Ives
   6. STC Seal: Reese, National Guard, Pemko
   7. Silencers: Ives

C. Product Description
   1. Hinges, SOUTHERN 204FMSS or equal:
      a. Full Mortise Detention Hinges shall be 4-1/2” x 4-1/2” x 0.188” thick investment cast 304 stainless steel with hospital tips and integral studs on both leaves. Pins shall be hardened stainless or alloy steel, concealed and non-removable. Each hinge shall be supplied with eight (8) ¼-20 flat head machine screws. All hinges and screws shall be US32D finished.
      b. Furnish three hinges for door through 84-inches in height and one additional hinge for each additional 30-inches of height or fraction thereof. Furnish three hinges for doors through 36-inches in width and one additional hinge for each additional 12-inches of width or fraction thereof.
      c. Except where otherwise indicated, hinges shall be mortised, 4-1/2” x 4-1/2”, cast steel or stainless steel, ball bearing, with pins made non-removable by a concealed hardened roll pin. All hinges shall be furnished with 1/4-20 TORX FHMS.
      d. Hinges shall be certified, by an independent testing lab, to meet or exceed the cycle requirements of ASTM 1758, Grade 1A.
2. Full surface hinges, equal to Southern Folger 203FS where indicated on architectural details for cuff port applications.

3. Strikes: All locks and latches shall be furnished with manufacturer's standard strikes complete with dust boxes to fully conceal the strike pocket. Where monitor strikes are specified, provide strikes as appropriate for the lock specified. All monitor strikes shall be designed to fit within a 2" face frame without protruding beyond the 2" frame depth.

4. Fasteners:
   a. Manufacturer hardware to conform to published template, generally prepared for machine screw installation. Do not provide hardware, which has been prepared for self-tapping of sheet metal screws.
   b. Furnish screws for installation with each hardware item. All exposed screw heads, whether door is open or closed, shall be Torx (with security stud) flat-head or oval head screws except as otherwise indicated. Screws shall be the same material and finished to match the applied hardware item. Other types of security screws are unacceptable unless specifically approved by the Architect Consultant.

5. Pull:
   a. Grip Type Door Pulls shall be cast of brass or bronze with satin finish of approximately US26D unless specified otherwise in hardware schedule. Approximate overall length, 8-11/16"; handhold, 5-1/4"; grip clearance, 1-1/2"; attachment holes, 7-3/4" o.c. Provide two (2) 3/8-16 x 5/8" flat head torx screws of same finish and material as pull.
   b. Flush Type Door Pulls shall be integral provided by the hollow metal manufacturer. Flush pulls at ADA cells, shall have a knuckle clearance of 1".

6. High Security Closer (LCN #4510T series) shall be surface mounted with security screws at all exposed locations and shall have fully adjustable spring tension. Closers shall have cast iron cylinders and two separately adjustable non-critical valves for closing speed and latching speed, plus a third valve for adjusting the hydraulic back-check. A smooth molded case cover shall conceal the closer body. Closer to be located on the side of door/frame farthest from inmate contact. Maximum opening clearance shall be 180-degrees. A track arm shall be used on the 4510T series closer. The GENERAL CONTRACTOR shall be responsible for coordinating the installation of the closer with jobsite frame installation conditions prior to installation. GENERAL CONTRACTOR shall coordinate closer installation with frame installation 083463. Closer body shall not be inhibited by, or touch the wall or any other object after installation. Closer must allow for maximum degree of open allowable without obstruction. Special top-jamb mount template ST3472 is allowed if closer header installed on door interferes with door swing. If the above conditions cannot be achieved, request direction from the Architect/Consultant, by providing suggested solution using LCN security grade products. Provide finish of standard powder coated aluminum.

7. Wall Mounted Door Stops (Wall mount only) (Ives FS18L) shall be a tamper resistant device that is embedded into the wall with an epoxy resin adhesive. Bumper shall be 2" diameter x 3-1/2" long and made from a non-hazardous silicone elastomer, 80 durometer. The threaded and grooved steel mounting shank shall be 5/8" in diameter and embedded into the bumper at least half the length of the bumper. Mounting shank shall extend 2-1/2" beyond the bumper bottom for embedding into the wall.
   a. Cell Doors: Provide wall-mounted door bumper 80" off of the floor and 8" from edge of door when in the opened position. If the above conditions cannot be achieved, request direction from the Architect.
   b. All other Security Doors: Provide wall-mounted door bumper 8" off of the floor and 8" from edge of door when in the opened position. If the above conditions cannot be achieved, request direction from the Architect.

8. Door Silencers: (Ives SR64) shall be standard resilient type and removable for replacement.
9. At doors from Corridors to Holding and Corridor to Attorney, provide with STC 35-50 materials. Apply materials equal to Reese Automatic Door Bottom 371A and Reese Head and Jamb Sill 599C.

2.03 MECHANICAL LOCKS FOR SECURITY DOORS

A. Acceptable Manufacturers
   1. The equipment and materials of this section shall be products manufactured by one of the listed manufacturers and must be equal to the part outlined in the product description. Southern Folger is shown in the product description as a design basis only:
      a. Southern Folger Detention Equipment Company (SOUTHERN), San Antonio, TX
      b. RR Brink Locking System (RRB), Shorewood, ILL
      c. Airteq Systems Inc., Montgomery, AL

B. Mechanical Locks and Accessories for Swinging Doors
   1. Standard Features
      a. Lock case to be high tensile strength alloy steel with cold rolled steel cover
      b. All locks to operate by inserting a key into matching cylinder and rotating key to unlock the lock.
      c. All lock steel parts shall be zinc plated for corrosion protection and are suitable for both interior and exterior applications.
      d. Keyed One Side (K1) or Keyed Two Sides (K2).

C. Products
   1. Mechanical Deadbolt, SOUTHERN 1010A:
      a. Lock size to be approximately 4/1/2" x 3" x 1-1/4". Deadbolt to be ¾" x 1-1/2" hot rolled steel with 5/8" throw. Deadbolt locking and unlocking activated by key only.
      b. The lock shall be supplied with a six (6) pin paracentric key cylinder.
      c. Provide extended bolt throw at cuff port locations as required by hollow metal fabrication. GENERAL CONTRACTOR shall fully coordinate with hardware and hollow metal manufacturers.
   2. Mechanical Latch, SOUTHERN 1080A:
      a. Lock size to be approximately 5-1/2" x 3-3/4" x 1-1/2". Deadbolts to be ¾" x 2" with ¾" throw. Deadbolt locking and unlocking activated by key only.
      b. Deadbolt to be made of cold rolled steel with ¼" diameter hardened steel inserts (2 each) unless otherwise specified.
      c. The lock shall be supplied with a six (6)-pin paracentric key cylinder.
      d. Provide 1-1/2" x 1-1/2" x ¼" x 10" high custom galvanized angle strike to receive lock bolt where installed in fence system. Weld custom strike to fence frame.
      e. Provide 3" x 3" gate stop gusset angles where required to stop gate swing. Welded at corners of gate opening.
      f. Provide hollow metal mounting plate where installed in hollow metal doors.
   3. Institutional Mortise Lockset, SOUTHERN 10500:
      a. A security mortise lockset for 2" thick individual swing doors that comply with the standard test methods defined in ASTM F1577-05. Locksets shall be supplied with high security rose and functions as specified by the door and/or hardware schedule. Lockset case and cover shall be 12-gauge (minimum) heavy-duty wrought steel, zinc dichromate plated. Latchbolt shall be one-piece stainless steel anti-friction type with ¾" throw, meeting ANSI A156.13. Deadbolt shall be investment cast stainless steel with hardened steel insert and a 1" throw. Deadlock actuator shall be stainless steel. Strike shall be ANSI standard, universal brass or stainless steel. Faceplate shall be 16 gauge (Minimum) stainless steel, US32D finish.
      b. Latchset shall be supplied with solid stainless steel (US32D finish) steel lever handles (both sides) unless otherwise specified.
c. Lockset shall be supplied with high security Provide M5 Maxi Mogul Cylinders unless otherwise specified. All exposed fasteners shall be stainless steel tamper proof.
d. Lock functions must match EXACTLY with functions specified herein if lock is substituted with that of another manufacturer.

4. Galvanized Material
   a. All exterior material shall be hot dipped galvanized.

2.04 KEYING AND KEYS

A. Keying and Keys
   1. An approved key schedule shall be provided at the time of submittal review.
   2. High Security Mogul Cylinders shall be keyed in sets and master keyed, sub-master keyed etc. to level as directed by the Owner.
      a. Provide five (5) keys per master code.
      b. Provide eight (8) keys per change key code.
   3. Paracentric prison locks shall be keyed in sets and provided with eight (8) keys for each change key code.

B. Key Control System:
   1. Keying: Provide key system as directed by the Owner.
   2. The General Contractor shall be responsible for all keys and in the unlikely event any key is lost, the General Contractor shall bear all costs incurred in having locks re-keyed. The General Contractor shall turn all keys over to the Owner as directed by the Owner for inclusion into the key cabinet.
   3. Provide key cabinet equal to Viking Detention grade or Southern Folger 6 series key cabinet with capacity for all keys required herein, plus 100%, installed in a location (or locations) as directed by the owner. Multiple cabinets may be required.
   4. Key cabinet shall be provided with Southern Folger 1010A deadbolt lock. Snap locks will not be accepted.
      a. Cabinet shall be fabricated from 10 gauge steel with 10 gauge leaf panels to hold Detention Mogul keys and Paracentric keys only unless otherwise instructed by the owner.
   5. When requested by the Owner, in writing, the General Contractor shall surrender any or all keys assigned to him.
   6. All keys shall be stamped with a maximum of six (6) characters, as directed by Owner. Each egress key shall be such that meets the 20126 NFPA-101 Life Safety Code (22.7.5) to identify key(s) by touch and sight. This system shall be coordinated and installed by the facility maintenance staff after closeout to satisfy this code requirement.

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. Examine and inspect all surfaces, anchors, and grounds that are to receive materials, fixtures, assemblies, and equipment specified herein. Check location, "rough in", and field dimensions prior to beginning work. Report all unsatisfactory conditions in writing to the Architect-Engineer and general contractor.
   1. Do not begin installation until all unsatisfactory conditions have been corrected.

B. Verify all dimensions and be responsible for their correctness. No extra compensation will be allowed for differences between actual measurements and the dimensions indicated on the drawings.
3.02 INSTALLATION

A. Install security materials and accessories in accordance with the final shop drawings, manufacturer's data, and as herein specified.
   1. Provide manufacturer's supervision of installation, including testing and interfacing of systems.

B. Install all components and complete system as indicated and in accordance with manufacturer's recommendations and instructions.

C. Nuts of all bolted work shall be drawn tight and threads battered or welded. Bolting may be used in the installation of detention equipment provided that the nuts are not accessible to inmates or exposed to view. Bolts shall be special oval head or flat head Torx security type. Screws shall be the same material and finished to match the applied hardware item. Other types of security bolts are unacceptable unless specifically approved by the Architect. Provide two sets of wrenches for each size bolt used.

3.03 ADJUSTING

A. Final Adjustments: Prior to final inspection check and re-adjust all components to operate within their designed capacity. All components shall be adjusted and tested to verify correct operation prior to final inspection.

B. All devices shall be tested for specified and manufacturer described operation.

C. All tests required by local agencies shall be performed.

D. All tests required by Owner and Owner's representative shall be performed.

E. Systems not meeting the minimum level of acceptability as defined in the test procedures shall be repaired and retested.

F. Provide documentation of test procedures and results.

G. Equipment manufacturer's representative shall certify that the systems are installed and operate as specified.

H. All costs to test and retest systems shall be the responsibility of the Detention Equipment Contractor.

3.04 SECURITY HARDWARE SCHEDULE

A. GENERAL NOTES:
   1. Provide a doorstop equal to Ives FS18L at all door openings unless otherwise instructed by the Architect.
   2. Any door greater than 3'-2" in width and/or 7'-4" in height shall receive four (4) hinges.
   3. Pulls shall be provided with flat head Torx security screws, same finish material as pull. Flush pulls shall be provided as integral by the hollow metal manufacturer at all locations as scheduled.
## SH1

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*NOTE: PROVIDE STC 35-50 SYSTEM WITH REESE 371A/599C IN LIEU OF SILENCERS.*

## SH2

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*NOTE: MODIFY 10515 AND REMOVE INSIDE THUMBTURN. DOOR SHALL BE FREE EGRESS.*

## SH3

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*NOTE: PROVIDE STC 35-50 SYSTEM WITH REESE 371A/599C IN LIEU OF SILENCERS.*

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*END OF SECTION*
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes the following:
   1. Swinging steel Detention doors.
   2. Steel Detention door frames.
   3. Detention door accessories.

1.03 DEFINITIONS

A. Uncoated Steel Sheet Thicknesses: Indicated as the minimum thicknesses.

B. Metallic-Coated Steel Sheet Thicknesses: Indicated as the minimum thicknesses of uncoated base metals.

C. Stainless-Steel Sheet Thicknesses: Indicated as the specified thicknesses for which over- and under-thickness tolerances apply, according to ASTM A 480/A 480M.

D. Nominal Surface of Floor Covering: Top surface of floor; for resilient tile and carpet, nominal surface of floor covering is defined as top of concrete slab.

1.04 REFERENCES

A. ASTM A366/A 366M-97 Standard Specification for Commercial Steel (CS), Carbon (0.15 Maximum Percent), Cold Rolled

B. ASTM A1011 Standard Specification for Steel, Carbon, (0.15 Maximum Percent), Hot Rolled Sheet and Strip, Commercial Quality

C. ASTM A653/A, 653M-96, Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot Dip Process, Commercial Quality

D. ASTM A 666-96b Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar

E. ASTM B 117-95 Standard Practice for Operation salt Spray (Fog) Apparatus


G. ASTM D610-95 Standard Test Method for Evaluating Degree of Rusting on Painted Steel Surfaces


1.05 PERFORMANCE REQUIREMENTS

A. Detention Doors: Provide detention doors and frames that comply with Security Grade 1, according to the latest edition of ASTM F 1450-12a, as determined by testing manufacturer's standard products representing those indicated for this Project.

B. Detention Sidelight and Borrowed-Light Frames: Provide detention vision frames that comply with ASTM F 1592 and removable glazing stop test according to HMMA 863-04, based on testing manufacturer's standard units.

1.06 SUBMITTALS

A. Product Data: Include construction details, material descriptions, core descriptions, and finishes for each type of detention door, frame and access panel, as specified.

B. Provide performance testing reports which support the testing requirements specified.

C. Shop Drawings: For detention doors and frames. Include conditions at openings, details of construction, dimensions of profiles, and details of joints and connections. Show anchorage and accessories. Include fastener types, sizes and spacing. Identify each detention door and frame using same reference numbers for openings as those on Drawings.

D. Shop Drawings: For access panels.
   1. Door and panel units: Show types, elevations, lock type, thickness of metals, and full size profiles of door members.
   2. General: Show connections of units and hardware to other Work. Include schedules showing location of each type and size of door and panel units.

E. Coordination Drawings: Drawings of each opening, including detention door and frame, drawn to scale and coordinating detention door hardware. Show the following:
   1. Locations, dimensions, and profiles of detention door hardware reinforcements.
   2. Locations and installation details of detention door hardware.
   3. Elevations of each detention door design type showing dimensions, locations of detention door hardware, and preparations for power, signal, and electrified and pneumatic control systems.
   4. Details of each detention frame type.
   5. Details of mortar boxes in detention frames for hardware and communication devices.

1.07 QUALIFICATION OF MANUFACTURERS

A. Qualifications of Detention Hollow Metal Manufacturers: Detention hollow metal manufacturing firms shall have not less than five (5) years continuous successful experience with manufacturing hollow metal. These firms shall now be actively engaged in the manufacture of detention hollow metal doors and frames of the type required for this project. Fabrication
methods and product quality shall meet or exceed standards set by the Hollow Metal Manufacturers Association, (HMMA), a division of the National Association of Architectural Metal Manufacturers (NAAMM), and be tested in accordance with ASTM F 1450-12a.

1. Submittal Requirements: In addition to a written request for substitutions, a full size corner sample of each type door and frame showing door construction, face stiffening, insulation, and top hinge reinforcements shall be provided. Provide details of each type of door and frame. Provide a list of 10 facilities of similar scope and size where the product has been installed for a minimum of 5 years. Provide the following information on the 10 facilities:
   a. List name and location of installation.
   b. Date of occupancy by Owner.
   c. Owner’s representative to contact and telephone number.
   d. Name of General Contractor, Construction Manager or General Contractor, and Architect including names of contacts and phone numbers.
   e. Provide performance data and tests: All detention hollow-metal door manufacturers shall submit to the Architect evidence of compliance with ASTM F 1450-12a and HMMA 863-04. Test reports and documentation shall be in accordance with ASTM F 1450-12a.

1) Test Specimens: Test doors shall be 3'-0" W x 7'-0" H with 100 square inch vision panel, 4" x 25" clear opening, positioned generally as shown in ASTM F 1450-12a, figure 3. Test doors and frames shall be prepared for hardware as specified in ASTM F 1450-12a, Section 6 “Specimen Preparation”.

2) Testing Procedures: Test doors and frames shall be furnished with hardware in accordance ASTM F 1450-12a, Section 6 – "Specimen Preparation". Latch throw of the lock shall not exceed 1”. Assemblies shall be tested in accordance with procedures outlined in ASTM F 1450-12a, 7.2 – “Door Assembly Impact Test”.

3) Door Static Load Test: Doors shall be tested in accordance with procedures outlined in ASTM F 1450-12a, 7.3 – “Door Static Load Test”.

4) Door Rack Test: Doors shall be tested in accordance with procedures outlined in ASTM F 1450-12a, 7.4 – “Door Rack Test”.

5) Performance Criteria for load testing shall be in accordance with applicable paragraphs of ASTM F 1450-12a, Section 7 – "Procedures".

6) Glass Stop Test: A rectangular view window test frame shall be constructed with a glass opening size of 28" x 33" (+1"). The frame shall be constructed of commercial quality steel meeting ASTM standard A366 or A 1011, 12-gauge maximum. Refer to HMMA 863-04, Figure 5, for test frame configuration.

7) A steel plate of 3/8” minimum thickness shall be glazed in place using the specified glass stop.

8) The test frame assembly shall then be rigidly fixed in the vertical position with the removable glass stop on the opposite side of the 3/8” plate from the impact ram.

9) A target on the side of the 3/8” plate shall be marked in one corner no more than 6” away from the stops.

10) Using the door ram pendulum system specified in ASTM F 1450-12a, Figure 2 deliver four hundred (400) impacts of 200 Ft-lbs. each, on the target area. Removable glass stops and the 3/8” plate shall remain firmly in place so that removal cannot be accomplished without removing the retaining screws. There shall be no more than one (1) broken screw in the assembly after impact test.

1.08 QUALITY ASSURANCE

A. Installer Qualifications: The General Contractor shall provide an authorized representative of detention door and frame manufacturer for installation of units required for this Project.

B. Source Limitations: Obtain detention doors and frames through one source from a single manufacturer.

C. Welding: Qualify procedures and personnel according to the following:
1. AWS D1.3, "Structural Welding Code--Sheet Steel."

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver detention doors and frames palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use non-vented plastic.

B. Deliver detention frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
   1. Where frames are to be cast into precast concrete modules, take additional precautions, including bracing for detention frames, to ensure that detention frames are not deformed or damaged by concrete forces.

C. Inspect detention doors and frames, on delivery, for damage. Minor damage may be repaired provided refinished items match new work and are approved by Architect; otherwise, remove and replace damaged items as directed.

D. Store detention doors and frames under cover at building site. Place units in a vertical position with heads up, spaced by blocking, on minimum 4-inch- (100-mm-) high wood blocking. Avoid using non-vented plastic or canvas shelters that could create a humidity chamber.
   1. If wrappers on detention doors become wet, remove cartons immediately. Provide minimum 1/4-inch (6-mm) space between each stacked detention door to permit air circulation.

1.10 COORDINATION

A. Coordinate installation of anchorages for detention frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.11 MAINTENANCE TOOLS

A. Tool Kit: Provide twelve (12) bits for use with security fasteners, each packaged in a compartmented kit configured for easy handling and storage.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Detention Hollow Metal Manufacturers:
   1. Trussbilt, LLC: Vadis Heights, MN
   2. Habersham Metal Products Company, Inc.: Cornelia, GA
   3. American Steel Products: Swainsboro, GA
   4. Slate Steel Door Industries: Hartselle, AL
   5. Or approved equivalent

2.02 MATERIALS

A. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, CS (Commercial Steel), Type B: Free of scale, pitting or surface defects: Pickled and oiled.

B. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, CS (Commercial Steel), Type B.
C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M CS (Commercial Steel), Type B; G60 (Z180) zinc galvanized or A60 (ZF180) zinc-iron-alloy galvannealed coating by hot dipped process.

D. Stainless-Steel Sheet: ASTM A 240/A 240M, austenitic stainless steel, Type 304, No. 3 finish unless otherwise indicated.

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

F. Concealed Bolts: ASTM A 307, Grade A, unless otherwise indicated.

G. Post-installed Expansion Anchors in Concrete: With capability to sustain, without failure, a load equal to 4 times the load imposed, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
   1. Corrosion Protection: Carbon-steel components zinc plated to comply with ASTM B 633, Class Fe/Zn 5 (0.005 mm) for Class SC 1 service condition (mild).
   2. Corrosion Protection: Stainless-steel components complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 (ASTM F 738M and ASTM F 836M, Alloy Group 1 or 4) for bolts and nuts; ASTM A 666 or ASTM A 276, Type 304 or 316, for anchors.

H. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching detention frames of type indicated.

I. Embedded Plate Anchors: Fabricated from mild steel shapes and plates, minimum 3/16 inch (4.8 mm) thick; with minimum 1/2-inch- (12.7-mm-) diameter headed studs welded to back of plate.

J. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

K. Detention Door, Sidelight and Borrowed-Light Glazing: Comply with Section 088853 “Security Glazing.”

L. Grout-field installed by general contractor: Comply with ASTM C 476, with a slump of 4 inches (102 mm) for detention frames built into masonry, 8 to 11 inches (200 to 280 mm) for detention frames installed in concrete as measured according to ASTM C 143/C 143M.

M. Epoxy Filler: Bondo or other substitution acceptable to the Architect.

2.03 DETENTION DOORS

A. General: Provide flush-design detention doors, 2 inches (50 mm) thick, of seamless hollow construction, unless otherwise indicated. Construct detention doors with smooth, flush surfaces without visible joints or seams on exposed faces or stile edges.
   1. Visible joints or seams around glazed, louvered panel inserts are permitted.
   2. For single-acting swinging detention doors, bevel both vertical edges 1/8 inch in 2 inches (3 mm in 50 mm).
   3. For sliding detention doors, square both vertical edges.

B. Metallic Core Construction: Provide the following core construction welded to both detention door faces:
1. Steel-Stiffened Core: 0.042-inch- (1.0-mm-) thick, steel vertical stiffeners extending full-door height, with vertical webs spaced not more than 4 inches (102 mm) apart, spot welded to face sheets a maximum of 3 inches (76 mm) o.c. Fill spaces between stiffeners with insulation of minimum 0.6-lb/cu. ft. (9.6-kg/cu. m) density.

2. Truss-Stiffened Core: 0.013-inch- (0.3-mm-) thick steel, truncated triangular stiffeners extending between face sheets and for full height and width of door; with stiffeners welded to face sheets not more than 3 inches (76 mm) o.c. vertically and 2-3/4 inches (70 mm) horizontally. Fill spaces between stiffeners with insulation of minimum 0.8-lb/cu. ft. density.

C. Vertical Edge Channels: 0.123-inch- (3.1-mm-) thick, continuous steel channel extending full-door height at each vertical edge, with webs of channels flush with door edges; welded to top and bottom channels to create a fully welded perimeter channel.

D. Top and Bottom Channels: 0.123-inch- (3.1-mm-) thick metal channel spot welded, not more than 4 inches (102 mm) o.c., to face sheets.

1. Reinforce tops and bottoms of detention doors with inverted horizontal channels of same material as face sheet so flanges of channels are even with bottom and top edges of face sheets.

2. Close top edge with 0.074-inch- (1.8-mm-) thick closing channel of same material as face sheet; welded so webs of channels are flush with top door edges.

3. Close bottom edge with 0.074-inch- (1.8-mm-) thick closing channel of same material as face sheet; welded so webs of channels are flush with bottom door edges.

E. Hardware Reinforcement: Fabricate reinforcing plates from same material as detention door face sheets to comply with the following minimum thickness:

1. Full-Mortise Hinges and Pivots: 0.187 inch (4.7 mm) thick.

2. Maximum-Security Surface Hinges: 12 Ga. 10” channel with 3/8” x 1” x 6” back-up at each hinge.

3. Strike Reinforcements: 10 ga. thick.

4. Slide-Device Hanger Attachments: As recommended by device manufacturer.

5. Lock Fronts, Concealed Holders, and Surface-Mounted Closers: 0.093 inch (2.3 mm) thick.

6. All Other Surface-Mounted Hardware: 0.093 inch (2.3 mm) thick.

7. Lock Pockets: 0.123 inch (3.1 mm) thick at secure side; welded to face sheet.

F. Frames shall be reinforced, drilled and tapped for all templated mortised hardware only, in accordance with the final approved hardware schedule and templates provided by the hardware supplier.

G. Loose Glazing Stops: Loose glazing stops shall be pressed steel angles, no less than 1 ¼” X 1 ¾” X 10 gauge. Requests for substituting material less than 10 gauge will be denied.

1. Angle tops shall be butt and notch and tight fitting at the corner joints, and secured in place with 1/4-28 special hardened tamperproof button head Torx security screws spaced 8” o.c. maximum and not more than 2 inches from each corner.

2. The frame underneath the glazing stops and the inside of the glazing stop shall be chemically treated for maximum paint adhesion and painted with a rust-inhibitive primer prior to installation in the frame.

H. Hardware Enclosures: Provide enclosures and junction boxes for electrically operated detention door hardware, interconnected with UL-approved, 1/2-inch- (12.7-mm-) diameter conduit and connectors.

1. Enclosures for mechanical paracentric locks with lock mountings. Provide unitized pocket preparation, which after fabrication forms a one-piece box that provides for the lock mounting plate to be recessed into the door such that, when secured in place, the mounting plate outside surface is flush with the door face sheet.
a. Lock preparation shall be constructed from 0.123 inch (3.1 mm) steel, punched for keying options as required, and drilled and tapped to receive lock mounting plate.
b. Finished preparation shall be a unitized lock pocket, which completely surrounds the lock and is securely welded to both face sheets and the perimeter edge channel.

2. Provide 0.067 inch (1.7 mm) enclosed lock bolt keeper in edge of door for jamb-mounted locks.

I. Interior Steel Detention Door Face Sheets: Fabricated from hot-rolled steel sheets, metallic-coated steel sheets where indicated and stainless steel sheets where indicated and other metal components from hot- or cold-rolled steel sheets.
   1. Security Grade 1: 12 gauge thick steel provided in all locations. Provide galvannealed material where noted on architectural door schedule.

2.04 DETENTION FRAMES

A. General: Fabricate detention frames of full-welded unit construction, with corners mitered, reinforced, and continuously welded full depth and width of detention frame. Knockdown frames are not acceptable. This requirement is intended to exceed the test methods of ASTM and HMMA.

B. Interior Steel Detention Frames: Fabricated from hot-rolled steel sheets, metallic-coated steel sheets where indicated and stainless steel sheets for stainless-steel detention doors, and other metal components from hot- or cold-rolled steel sheets.
   1. Security Grade 1: 12 gauge thick steel. Provide galvannealed material where noted on architectural door schedule.

C. Hardware Reinforcement: Fabricate reinforcing plates from same material as detention frame to comply with the following minimum thickness:
   1. Full-Mortise Hinges and Pivots: 3/16” x full width of jamb x 10” in length at each hinge. The top hinge shall be additionally reinforced with 3/16” formed angle welded both to hinge reinforcing and frame face. This requirement is intended to exceed the test methods of ASTM and HMMA.
   2. Strikes, Flush Bolts, and Closers: 0.187 inch (4.7 mm) thick.
   3. Surface-Mounted Hardware: 12 ga. (2.66 mm) thick.

D. Hardware Enclosures: Provide enclosures and junction boxes for frame mounted communication devices interconnected with UL-approved, ½ inch diameter conduit and connectors.
   1. Provide enclosures with access for conduit, tapped holes for hardware and internal fastener protection so fasteners will seat after frame is grouted full.
   2. Electrical access boxes will not be permitted except at hardware pockets or communication mortar boxes. Provide knockout at top and bottom of each box to accept conduit.
   3. Lock pockets for jamb mounted locks: Provide 0.123 inch (3.1 mm) thick steel enclosure with:
      a. Surface mounted cover, minimum 10 ga. thick steel plate with uniform beveled edges on the side closest to the lock strike or frame rabbet, secured with a minimum of 8 flathead Torx security screws.
      b. Secure lock to frame or pocket in accordance with lock manufacturer’s recommendations for each lock type.
      c. Provide concealed lock front preparation with frame rabbet cutout only to allow passage of latch bolt and deadbolt actuator. Lock front and case are not exposed.
      d. Provide key access ports at locks keyed two sides or side opposite the door swing. Size key access port to accommodate paracentric keys on a key ring.

E. Head Reinforcement: Leave vertical mullions in detention frames open at top for grouting.
F. Grout Holes: Provide grout holes in frames to be installed in existing wall or concrete wall openings. Weld 0.093-inch back reinforcing plate with 1-3/8” diameter hole to inside of frame. Flush cover plate, same gauge as frame, to be shipped loose for field installation after frame is grouted full. Weld cover plate to frame and grind smooth for a seamless finish.

G. Jamb Anchors: Weld jamb anchors to detention frames near hinges and directly opposite on strike jamb as required to secure detention frames to adjacent construction. Locate jamb anchors at 16” on center and as follows:

1. Detention Door Frames: One additional anchor for each 16 inches (406 mm) or fraction thereof more than 40 inches (1016 mm) in height.
2. Detention Sidelight and Borrowed-Light Frames: One additional anchor for each 16 inches (406 mm) or fraction thereof more than 40 inches (1016 mm) in height.
3. Masonry Type: Adjustable, corrugated or perforated, strap-and-stirrup anchors to suit detention frame size; formed of same material and thickness as detention frame; with strap not less than 2 inches (50 mm) wide by 10 inches (250 mm) long with hole in strap for vertical wall reinforcing.
4. Post-installed Expansion Anchors for In-Place Concrete or Masonry: Minimum 1/2-inch-(12.7-mm-) diameter concealed bolts with expansion shields or inserts. Provide conduit spacer from detention frame to wall, welded to detention frame. Reinforce detention frames at anchor locations.

H. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, formed of same material and thickness as detention frame, and as follows:

1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners, welded to bottom of jambs and Mullions with at least two ½” long mig welds each side per anchor.
2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch (50-mm) height adjustment, welded to jambs and Mullions with at least 4 spot welds per anchor. Terminate bottom of detention frames at finish floor surface.

I. Rubber Door Silencers: Except on weather-stripped detention doors, drill stops in strike jambs to receive three silencers on single-detention-door frames and drill head jamb stop to receive two silencers on double-detention-door frames. Install plastic plugs to keep holes clear during construction.

J. Grout Guards: Provide grout guards of same material as detention frame, welded to detention frame at back of hardware cutouts and glazing-stop screw and silencer preparations to close off interior of openings and prevent mortar or other materials from obstructing hardware operation or installation.

2.05 STOPS AND MOLDINGS

A. General: Provide stops and moldings around glazed panels where indicated.

1. Frame Stops for Detention Doors: Minimum 5/8 inch high, unless otherwise indicated.
2. Frame Stops for Detention Sidelights and Borrowed Lights: Minimum 5/8 inch high, unless otherwise indicated.
3. Glazing stops shall be 1 ⅛” X 1 ¼” X 10 gauge, no substitutions.

B. Fixed Detention Door Moldings: Formed from 12 ga. thick sheet reinforcing ‘Z’, of same material as detention door face sheets, spot-welded to face sheets a maximum of 5 inches o.c.

C. Fixed Detention Frame Moldings: Formed integral with detention frames, unless otherwise indicated. Form corners with butted or mitered hairline joints.
D. Stops for Security Glazing: Formed from 0.123-inch thick, pressed-steel angle. Form corners with butt and notch ends to be tight fitting at the corner joints. Secure with minimum 1/4-28 self-tapping/thread forming pinned Torx button head security screws spaced uniformly not more than 8 inches o.c. and not more than 2 inches from each corner.

E. Deliver frames to project site with stops temporarily secured with 2 Torx ¼-28 security screws. Ship security screws (plus 10% spare) in appropriate containers labeled and tagged to match detention frames.

F. Coordinate rabbet width between fixed and removable stops with type of glass or panel and type of installation indicated.

2.06 ACCESSORIES

A. Cuff Port Openings: Provide a flush mounted cuff port door at the center of hollow metal doors. The cuff port opening shall be fabricated from 10 gauge interior channels securely welded to the inside of both face sheets. Reinforcing for cuff port locks shall be 10ga. channels or pockets. The clear opening shall be as depicted on the architectural drawings. The door shall be constructed of minimum 10ga. body and shall have a 10ga. backup plate securely welded and finished smooth so as to be flush to the inside and outside door skins. Door to contain formed metal recessed pull for outside access. Door flap to be affixed with two hinges equal to Southern Folger type 203FS (for 180 degree open). Provide a dead bolt lock equal to Southern Folger 1010A-1.

2.07 FABRICATION

A. Fabricate detention doors and frames rigid, neat in appearance, and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Weld exposed joints continuously; grind, fill, dress, and make smooth, flush, and invisible. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

1. Fabricate detention doors and frames to comply with manufacturing tolerances indicated in HMMA 863-04.

B. Continuously weld detention frame corners, with contact edges closed tight and faces mitered.

C. Fabricate multiple-opening detention frames with mullions that have closed tubular shapes and with no visible seams or joints.

D. Exposed Fasteners: Provide countersunk security fasteners for exposed screws and bolts, unless otherwise indicated.

E. Hardware Preparation: Factory-prepare detention doors and frames to receive mortised hardware, including cutouts, reinforcement, mortising, drilling, and tapping, according to final door hardware schedule and templates provided by detention door hardware supplier. Comply with applicable requirements in DHI A115 Series for detention door and frame preparation for door hardware.

1. Reinforce detention doors and frames to receive surface-mounted door hardware. Drilling and tapping may be done at Project site.

2. Locate door hardware as indicated or, if not indicated, according to HMMA 863-04, “Guide Specifications for Detention Security Hollow Metal Doors and Frames.”

F. Factory-cut openings in detention doors for accessories.
G. Welding: Weld components to comply with referenced AWS standard. Weld before finishing components to greatest extent possible. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

H. Glazing Channels: Provide minimum clearances for thickness and type of glass indicated, according to GANA's "Glazing Manual."

I. Security Fasteners: Fabricate detention doors and frames using security fasteners with head style appropriate for fabrication requirements, strength, and finish of adjacent materials, except that a maximum of two different sets of tools shall be required to operate security fasteners for Project. Provide stainless-steel security fasteners in stainless-steel materials, exterior doors and frames and interior doors and frames located in wet areas.

2.08 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish detention doors and frames after assembly.

2.09 METALLIC-COATED STEEL FINISHES

A. Surface Preparation: Clean surfaces with non-petroleum solvent so surfaces are free of oil and other contaminants. After cleaning, apply a conversion coating suited to organic coating to be applied over it. Clean welds, mechanical connections, and abraded areas and apply galvanizing repair paint specified below to comply with ASTM A 780.
   2. Factory Priming for Field-Painted Finish: Apply shop primer specified below immediately after surface preparation and pretreatment. Apply a smooth coat of even consistency to provide a uniform dry film thickness of not less than 0.7 mils (0.02 mm).
   3. Shop Primer: Manufacturer's or fabricators standard, fast-curing, lead- and chromate-free primer complying with ANSI A224.1 acceptance criteria; recommended by primer manufacturer for zinc-coated steel; compatible with substrate and field-applied finish paint system indicated; and providing a sound foundation for field-applied topcoats despite prolonged exposure.

B. Steel Sheet Finishes
   1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning"; remove dirt, oil, grease, or other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 3, "Power Tool Cleaning," or SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
   2. Factory Priming for Field-Painted Finish: Apply shop primer specified below immediately after surface preparation and pretreatment. Apply a smooth coat of even consistency to provide a uniform dry film thickness of not less than 0.7 mils (0.02 mm).
   3. Shop Primer: Manufacturer's or fabricators standard, fast-curing, corrosion-inhibiting, lead- and chromate-free, universal primer complying with ANSI A224.1 acceptance criteria; compatible with substrate and field-applied finish paint system indicated; and providing a sound foundation for field-applied topcoats despite prolonged exposure.
2.10 SOURCE QUALITY CONTROL

A. Owner may select one detention door at random from detention doors delivered to Project and have it cut in half or otherwise taken apart for verification that construction complies with requirements.
   1. Should examination disclose door construction at variance from that specified, the door manufacturer shall, upon direction of the Architect, replace all doors shipped to the project, as of the date of inspection, with doors constructed in conformance with project specifications. Under conditions of non-conformity, the door manufacturer shall pay for the destroyed door, replacement doors and related labor.
   2. Should examination prove the door was constructed in conformance with the specifications, the Owner will pay to replace the destroyed door and related labor.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of detention doors and frames.
   1. Examine rough-ins for embedded and built-in anchors to verify actual locations of detention frame connections before detention frame installation.
   2. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of detention doors and frames.

B. Inspect built-in and cast-in anchor installations before installing detention frames to verify that anchor installations comply with requirements. Prepare inspection reports.
   1. Remove and replace anchors where inspections indicate that they do not comply with specified requirements. Reinspect after repairs or replacements are made.
   2. Perform additional inspections to determine compliance of replaced or additional work. Prepare inspection reports.

C. Verify locations of detention doors and frames with those indicated on Coordination Drawings.

D. For material whose orientation is critical for its performance as a ballistic barrier, verify installation orientation.

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

3.02 PREPARATION

A. Prior to installation and with spreaders removed, adjust detention frames for squareness, alignment, twist, and plumb to the following tolerances:
   1. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb and perpendicular to frame head.
   2. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of face.
   3. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of door rabbet.
   4. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a perpendicular line from head to floor.
3.03 INSTALLATION

A. General: Install detention doors and frames plumb, rigid, properly aligned, and securely fastened in place, complying with Drawings, Coordination Drawings, DHI A115.IG, and manufacturer's written recommendations.

B. Detention Frames: Install detention frames for detention doors, transoms, sidelights, borrowed lights and other openings, of sizes and profiles indicated.
   1. Set masonry anchorage devices where required for securing detention frames to in-place concrete or masonry construction.
      a. Set anchorage devices opposite each anchor location according to details on Shop Drawings and anchorage device manufacturer's written instructions. Leave drilled holes rough, not reamed, and free of dust and debris.
   2. Embedment-Masonry-Type Jamb Anchors: Weld wall angle anchors to embedded steel plates to match locations of detention frame angle anchors. Remove jamb faces from detention frames and set detention frames into opening until detention frame anchors contact and match embedded anchors. Weld detention frame anchors to embedded anchors with 1-inch- (25-mm-) long welds at each end of angle. Reinstall jamb faces of detention frames.
   3. Post-installed Expansion Jamb Anchors: After bolt is tightened, weld bolt head to provide non-removable condition. Grind, dress, and finish smooth welded bolt head.
   4. Floor anchors may be set with powder-actuated fasteners instead of post-installed expansion anchors if so indicated on Shop Drawings.
   5. Placing Detention Frames: Set detention frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.
      a. Field splice only at approved locations. Weld, grind, and finish as required to conceal evidence of splicing on exposed faces.
      b. Install detention frames with removable stops located on secure (non-inmate) side of opening.
   6. Assemble detention frames fabricated in sections. Install angle splices at each corner, of same material and thickness as detention frame, and extend at least 4 inches (101.6 mm) on both sides of joint unless this extension directly interferes with mortar protection, then provide a minimum of 1" (25.4 mm) on both sides of joint.
   7. Continuously weld and finish smooth joints between faces of abutted, multiple-opening, detention frame members.
   8. Field Welding: Comply with the following requirements:
      a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
      b. Obtain fusion without undercut or overlap.
      c. Remove welding flux immediately.
      d. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
   9. Grout-field installed by general contractor: Fill space between detention frames and concrete or masonry with grout. Install grout in lifts and take other precautions, including bracing detention frames, to ensure that detention frames are not deformed or damaged by grout forces. If a light consistency grout (greater than 5.0 inch slump in accordance with ASTM C 143) is to be used, special precautions shall be taken in the field by the Installer to protect tapped holes, electrical knock-outs, lock pockets, grout guards, junction boxes, etc., in the frames.

C. Swinging Detention Doors: Fit detention doors accurately in their respective detention frames, with the following clearances:
   1. Between Doors and Frames at Jambs and Head: 1/8 inch (3.2 mm).
   2. Between Edges of Pairs of Doors: 1/8 inch (3.2 mm).
3. At Door Sills with Threshold: 1/8 inch over threshold.
4. At Door Sills without Threshold: 5/8 inch (15.9 mm).

D. Comply with installation tolerances indicated in HMMA 863-04.

E. Glazing: Comply with installation requirements in Division 11 Section "Security Glazing," unless otherwise indicated.

3.04 FIELD QUALITY CONTROL

A. Inspect installed products to verify compliance with requirements. Prepare inspection reports and indicate compliance with and deviations from the Contract Documents.

B. Remove and replace detention work where inspections indicate that work does not comply with specified requirements.

C. Perform additional inspections to determine compliance of replaced or additional work. Prepare inspection reports.

D. Prepare field quality-control certification that states installed products and their installation comply with requirements in the Contract Documents.

3.05 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items just before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including detention doors, frames, steel grating, and door accessories, that are warped, bowed, or otherwise unacceptable.

B. Clean grout and other bonding material off detention doors and frames immediately after installation.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying primer.
   1. After finishing smooth field welds, apply air-drying primer.

D. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes the following:
   2. Glazing accessories for Security glazing.

1.03 PERFORMANCE REQUIREMENTS

A. Provide security glazing that complies with the requirements listed below as indicated by the test ratings for specific glazing types.
   1. H.P. White Laboratory, Inc.; HPW TP-0500.02.

1.04 SUBMITTALS

A. General: Submit the following according to Conditions of Contract and Division 1 Specification Sections.

B. Product data for each security glazing type, including type of materials, thickness, installation requirements, method of test, and performance. Submit only the most recent literature & cleaning instructions and any other documentation deemed necessary to demonstrate compliance to the specification.

C. Test reports showing compliance with specified requirements.

D. Certification by manufacturer that products supplied comply with performance requirements specified.

E. Maintenance data covering cleaning and protection requirements to include in the Operation and Maintenance Manual specified in Division 1 and 11.

F. Upon request only of the Architect, submit 2 samples, 12" square, of each type of security glazing product.

G. Submit a composite detail of the glass and frame assembly. This detail shall show and define all products in the assembly including, but not limited to, the following: Frame, glass stop, glass, setting blocks, glazing tape, and sealant. All products used in the glazing composite must be compatible.

1.06 QUALITY ASSURANCE

A. Comply with ASTM F1915-12 containment test for forced entry performance. Round robin testing is not acceptable.
B. Manufacturer Qualifications: Firm with minimum 5 years experience in manufacturing security glazing products that are similar to those indicated for this Project and that have a record of successful in-service performance.

C. Installer Qualifications: Engage an experienced Installer who has a minimum of 5 years experience in installing security glazing similar to that required for this Project.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect products according to manufacturer's recommendations. Specifically, avoid damage to glass edges, and prevent damage from temperature changes, sunlight, and moisture.
   1. Furnish polycarbonate materials with a strippable water resistant masking paper on exposed surfaces.

1.08 PROJECT CONDITIONS

A. Environmental Conditions: Do not install glazing when either air or substrate temperature exceeds the range recommended by sealant manufacturer or when substrate is wet, damp, or covered with snow, ice, or frost.

B. Install bulk sealants only at air and substrate temperatures above 40 deg F (4 deg C).

1.09 WARRANTY – LAMINATED PRODUCTS

A. Warranty: Submit a written warranty, executed by manufacturer, agreeing to replace laminates that delaminate within 5 years from date of Substantial Completion. If delamination damage occurs and upon inspection is found beyond a reasonable doubt to be caused by security sealant contact with raw glazing edge, the General Contractor shall be responsible for replacing the glazing at their expense.

B. Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturers:
   2. Sheffield Plastics (Polycarbonate & Laminated Polycarbonate) (Pending Testing)
   3. LTI Smart Glass (Glass-Clad Polycarbonate & Fire Rated Glass) (Pending Testing)

B. Acceptable Distributors:
   1. Global Security Glazing, Selma, AL (800) 633-2513
   2. Allied Protective Glazing LLC., Pittsfield, MA (413) 769-2909 (Pending Testing)
   3. Cope Plastics, Hazelwood, MO (877) 528-2594 (Pending Testing)

C. Available Products: Unless pre-approved prior to bidding, provide the products specified.
D. The General Contractor and glazing manufacturer agree to comply with the requirements as defined in section 3.4 and to provide materials and warranty as required by the contract documents using the materials listed in section 2.2.

2.02 MATERIALS

A. Polycarbonate Sheet: Rigid, flat polycarbonate sheet; thickness as indicated.
   1. Relative Burning Characteristics: Average extent of burning less than 1 inch, when tested per ASTM D 635, using the thickness of material indicated for Project.

B. Type SG1
   1. 1/2” MARGARD® shall be 1-ply, clear, extruded monolithic polycarbonate of 1/2” LEXAN® monolithic sheet with a MARGARD® surface Equal to Global MR10-1/2”.

2.03 FABRICATION

A. Fabricate glazing with bite and edge clearance dimensions, including tolerances, as recommended by manufacturer and GANA "Glazing Manual." Exception: Where specific bite dimensions are indicated on drawings, as required for proper securement of glazing in frames, comply with those dimensions.

B. Grind exposed edges smooth, using methods recommended by manufacturer.

2.04 GLAZING ACCESSORIES

A. Installation Materials-General: Select products that have appropriate performance characteristics as recommended by glazing manufacturer and that are compatible with materials they will contact.
   1. Provide a letter from the glass manufacturer that states all glazing materials submitted are compatible with the glass submitted.

B. Glazing Tape:
   1. Pre-shimmed, 100 percent solids, polyisobutylene-butyl rubber with internal spacer rod.

C. Sealant:
   1. Provide sealant as heal bead for setting blocks at security glazing only: One part silicone rubber meeting Federal Specification TT-S-00230C, Class A, ASTM C-920 Type S, Grade NS, Class 25; Equal to Dow Corning 795.

D. Security Sealant:
   1. Provide at all interior security glazing only: Dynaflex SC. One part non-sag tamper resistant elastomeric STPU meeting Federal Specifications TT-S-00230C, Type II, Class B and ASTM C-920-98, Type S, Grade NS, Class 12.5 as manufactured by Picora. When applying directly to a polycarbonate surface, application area must be primed with Picora P-120 primer prior to use as required per published manufacturer recommendations.

E. Setting Blocks:
   1. TPR (Thermoplastic rubber) with 70-90 shore “A” durometer hardness, chemically compatible with glazing components.
PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine frames and rabbets in which glazing is to be installed for possible damaging conditions. In particular, check for conditions that would void the manufacturer's warranty.
   1. Verify that minimum edge engagement of framing is 1 inch (25 mm).

B. Submit Installer's report describing unacceptable conditions.

C. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean surfaces to receive glazing just before installing glazing.

3.03 INSTALLATION – GENERAL

A. Comply with recommendations for installation contained in the GANA "Glazing Manual" and "Sealant Manual" except when specifically not recommended or prohibited by the glazing or glazing accessory manufacturer; comply with manufacturers' recommendations.

B. Protect glazing from edge and surface damage during handling and installation.

C. Do not install glazing that has edge or surface damage or defects that reduce glazing strength or diminish appearance.

D. Permanently adhere setting and edge blocks to frame.

E. Applied Stops: Fasten as indicated, after glazing has been set in frame. Do not exert excess force on glazing and glazing spacers.

3.04 TAPE GLAZING

A. Install tape continuously, placed so that when compressed the exposed face will be 1/8 inch (3 mm nominal) below face of framing.

B. Do not use joints in tape, except at corners; seal joints with compatible sealant.

C. After installation of stops, install security sealant over exposed tape on both sides of all security glass/polycarbonate provided per this specification section and per 2.4.D.1 above.
   1. Security sealant shall be installed as a cap bead only and is never to come in contact with the raw cut edge of the glazing material. Setting blocks shall be installed in a heal bead of glazing sealant equal to Dow Corning 795 per 2.4.C above. If security sealant is found on raw glazing edge during inspection, the General Contractor shall be responsible for replacing the glass at their expense.

D. Apply fillet bead of Dow Corning 795 glazing sealant over exposed tape on exterior side of exterior glazing only.
3.05 PROTECTION AND CLEANING

A. Apply warning tape or bands across opening without touching glazing, immediately after installing glazing in frames.

B. Do not apply tape or labels to glazing; remove temporary labels.

C. Protect glazing during subsequent construction operations; remove dirt, contaminants, staining agents and other deposits promptly using manufacturer's recommended procedures.

D. Replace glazing that is damaged.

E. Provide final protection and maintain conditions in a manner acceptable to manufacturer and Installer that ensures that security glazing is without damage or deterioration at the time of Substantial Completion.

F. Remove protective masking paper from polycarbonate glazing just prior to cleaning.

G. Wash both sides of glazing not more than 10 days before inspections for Substantial Completion.

3.06 OWNER PERSONNEL INSTRUCTION

A. Have manufacturers' maintenance instructions on hand at time of instruction.

B. Instruct designated Owner personnel on maintaining security glazing.

END OF SECTION
PART 1  GENERAL

1.01 SECTION INCLUDES
   A. Window shades and accessories.

1.02 REFERENCE STANDARDS
   C. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
   E. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems; Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS
   A. Coordination:
      1. Where motorized shades are to be controlled by control systems provided under other sections, coordinate the work with other trades to provide compatible products.
      2. Coordinate the work with other trades to provide rough-in of electrical wiring as required for installation of hardwired motorized shades.
   B. Preinstallation Meeting: Convene one week prior to commencing work related to products of this section; require attendance of all affected installers.
   C. Sequencing:
      1. Do not fabricate shades until field dimensions for each opening have been taken.
      2. Do not install shades until final surface finishes and painting are complete.

1.04 SUBMITTALS
   A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
   B. Product Data: Provide manufacturer's standard catalog pages and data sheets including materials, finishes, fabrication details, dimensions, profiles, mounting requirements, and accessories.
   C. Shop Drawings: Include shade schedule indicating size, location and keys to details.
   D. Certificates: Manufacturer's documentation that line voltage components are UL listed or UL recognized.
   E. Source Quality Control Submittals: Provide test reports indicating compliance with specified fabric properties.
   F. Selection Samples: Include fabric samples in full range of available colors and patterns.
   G. Verification Samples: Minimum size 6 inches square, representing actual materials, color and pattern.
   H. Manufacturer's Instructions: Include instructions for storage, handling, protection, examination, preparation, and installation of product.
   I. Project Record Documents: Record actual locations of control systems and show interconnecting wiring.
   J. Operation and Maintenance Data: List of all components with part numbers, sources of supply, and operation and maintenance instructions; include copy of shop drawings.
   K. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE
   A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.
1.06 MOCK-UP
A. Mock-Up: Provide full size mock-up of window shade complete with selected shade fabric including sample of seam when applicable.
   1. Full-sized mock-up may become part of the final installation.

1.07 DELIVERY, STORAGE, AND HANDLING
A. Deliver shades in manufacturer's unopened packaging, labeled to identify each shade for each opening.
B. Handle and store shades in accordance with manufacturer's recommendations.

1.08 FIELD CONDITIONS

1.09 WARRANTY
A. See Section 01 7250 - Closeout Submittals, for additional warranty requirements.
B. Provide manufacturer's warranty from Date of Substantial Completion, covering the following:
   1. Shade Hardware: One year.
   2. Fabric: One year.
   3. Aluminum and Steel Coatings: One year.

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. Manually Operated Roller Shades:
   2. Substitutions: See Section 01 6000 - Product Requirements.
B. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.

2.02 WINDOW SHADE APPLICATIONS
A. Sheer Weave Style 7000 Blackout Fabric
   1. Type: Roller shades.
   2. Fabric: 100% Polyester with Acrylic Foamed Backing (PVC Free).
   3. Fabric Performance Requirements:
      a. Openness Factor: Opaque
      b. Solar Transmittance (Ts): 0
      c. Visible Light Transmittance (Tv): 0
      d. Solar Absorption (As): 36
      e. Solar Reflectance (Rs): 64
   4. Color: As selected by Architect from manufacturer's full range of colors.

2.03 ROLLER SHADES
A. Roller Shades: Fabric roller shades complete with mounting brackets, roller tubes, hembars, hardware and accessories; fully factory-assembled.
   1. Drop: Regular roll.
   2. Size: As indicated on drawings.
B. Fabric: Non-flammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation ; PVC-free ; 100 percent recycled.
   1. Blackout Shades: Block virtually all the light; Openness Factor equal to zero (0).
   2. Flammability: Pass NFPA 701 large and small tests.
C. Roller Tube: As required for type of operation, extruded aluminum with end caps.
   1. Dimensions: Manufacturer's standard, selected for suitability for installation conditions, span, and weight of shades.
   2. Fabric Attachment: Utilize extruded channel in tube to accept vinyl spline welded to fabric edge.
D. Hembars and Hembar Pockets: Wall thickness designed for weight requirements and adaptation to uneven surfaces, to maintain bottom of shade straight and flat.
2.04 ACCESSORIES

A. Fascias: Size as required to conceal shade mounting.
   1. Style: As selected by Architect from shade manufacturer’s full selection.
   2. Material and Color: To match shade.

B. Brackets and Mounting Hardware: As recommended by manufacturer for mounting configuration and span indicated.

C. Fasteners: Non-corrosive, and as recommended by shade manufacturer.

2.05 FABRICATION

A. Fabricate shades to fit openings within specified tolerances.
   1. Vertical Dimensions: Fill openings from head to sill with 1/4 inch space between bottom bar and window stool.
   2. Horizontal Dimensions - Inside Mounting: Fill openings from jamb to jamb.

B. Dimensional Tolerances: As recommended in writing by manufacturer.

C. At openings requiring continuous multiple shade units with separate rollers, locate roller joints at window mullion centers; butt rollers end-to-end.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine finished openings for deficiencies that may preclude satisfactory installation.

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

C. Start of installation shall be considered acceptance of substrates.

3.02 PREPARATION

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

B. Coordinate with window installation and placement of concealed blocking to support shades.

3.03 INSTALLATION

A. Install in accordance with manufacturer’s instructions and approved shop drawings, using mounting devices as indicated.

B. Installation Tolerances:
   1. Inside Mounting: Maximum space between shade and jamb when closed of 1/16 inch.

C. Replace shades that exceed specified dimensional tolerances at no extra cost to Owner.

D. Adjust level, projection and shade centering from mounting bracket. Verify there is no telescoping of shade fabric. Ensure smooth shade operation.

3.04 CLEANING

A. Clean soiled shades and exposed components as recommended by manufacturer.

B. Replace shades that cannot be cleaned to "like new" condition.

3.05 CLOSEOUT ACTIVITIES

A. Demonstration: Demonstrate operation and maintenance of window shade system to Owner’s personnel.

B. Training: Train Owner’s personnel on operation and maintenance of system.
   1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
   2. Provide minimum of one (1) hour training by manufacturer's authorized personnel at location designated by the Owner.
3.06 PROTECTION

A. Protect installed products from subsequent construction operations.
B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION
PART 1 -- GENERAL

1.01 SECTION INCLUDES

A. Upgrades to Existing Inmate Elevators, Number 11 & 12 as indicated.

1.02 EXISTING SYSTEM DESCRIPTION

A. Performance Requirements for elevators are defined as follows:
   1. Unit Identification: Elevator/building number 11 & 12
   2. Description of Work:
      Elevator 11 – Install a new entrance/opening at level 2 and 4. Delete entrance/opening at level 3. Elevator 12 – Delete entrance/opening at level 2 and 3. Elevator 11 and 12 – Provide call, send, signal modifications, and controller modifications to the existing security operating panel, signal indicators, and controllers.
   3. Maintenance Period: 0 months, continue existing maintenance agreement

1.03 QUALITY ASSURANCE

A. Manufacturer: The manufacturer shall provide new elevator equipment manufactured by a firm with a minimum of ten (10) years of experience in fabrication of elevators and modernization systems equivalent to those specified. Refurbished, re-conditioned, or re-built original style components shall NOT be acceptable. Material provided or installed by a third party shall NOT be acceptable.

B. Regulatory Requirements: The design and installation of the modified elevator components shall comply with the latest version of ASME A17.1 in affect at the start of manufacturing.

C. Permits and Inspections: The manufacturer shall provide licenses and permits and perform required inspections and tests.

1.04 REFERENCES

Referenced industry and government standards include the following:

A. ANSI/NFPA 70, National Electrical Code
B. ASME A17.1, Safety Code for Elevators and Escalators
D. CAN/CSA C22.1, Canadian Electrical Code
E. CAN/CSA-B44, Safety Code for Elevators and Escalators
F. Local Building Codes
G. Model Building Codes

1.05 SUBMITTALS

Manufacturer shall submit the following:

A. Product Data: manufacturer's product data for each component proposed for use, including the following: Samples, color charts, etc.
1.06 WARRANTY

A. The elevator contractor guarantees the materials and workmanship of the apparatus furnished under these specifications. The elevator contractor shall make good any defects which may develop within one (1) year from the date of acceptance of each elevator component not due to: ordinary wear and tear; vandalism; improper or insufficient maintenance by others; abuse, misuse, or neglect; or any other cause beyond the control of the elevator contractor.

PART 2 -- EXECUTION

2.01 PREPARATION

A. Acquire field dimensions and other conditions under which this work is to be performed. Do not proceed with work until unsatisfactory conditions are corrected. Rough openings for the new entrances are to be provided BY OTHERS.

2.02 INSTALLATION

A. Install all elevator components except as specifically provided for elsewhere.
   1. The following items must be complete PRIOR TO DELIVERY AND INSTALLATION:
      a. Barricade Requirements
         OSHA approved safety barricades around new wellway openings.
      b. Access Requirements
         Access to the site must be available.
      c. Protection Requirements
         Provisions to protect the elevator equipment from damage throughout completion of the project.
   2. The following items must be complete PRIOR TO FINAL ASSEMBLY:
      a. Rough openings for new elevator entrances as required.

2.03 DEMONSTRATION

A. The elevator contractor shall make a final check of each new entrance with the owner or owner's representative present prior to turning each elevator over for use. The elevator contractor shall determine that control systems and operating devices are functioning in accordance with the specification.
PART 1 -- GENERAL

1.01 SECTION INCLUDES

A. Complete Escalator Modernization and Upgrade of existing escalator systems.

1.02 EXISTING SYSTEM DESCRIPTION

A. Performance Requirements for escalators are defined as follows:
   1. Quantity: 2
   2. Unit Identification: Escalator/building number 1 & 2
   3. Floors Served: LL, 1
   4. Speed: Ascend and descend at a nominal speed of 100 feet/minute (0.5 M/sec.)
   5. Vertical Rise: 20 feet, and 0 inches
   6. Nominal Step Width: 24
   7. Power Supply: 460 VAC/3 Phase/60 Hertz
   8. Maintenance Period: 12 months

1.03 QUALITY ASSURANCE

A. Manufacturer: The manufacturer shall provide new escalator equipment manufactured by a firm with a minimum of ten (10) years of experience in fabrication of escalators and modernization systems equivalent to those specified. Equipment provided for the modernization shall represent manufacturer’s latest technology. Refurbished, re-conditioned, or re-built original style components shall NOT be acceptable. Material provided or installed by a third party shall NOT be acceptable.

B. Installation: The manufacturer shall modernize, install, and service/maintain escalators, and shall be capable of demonstrating no less than 100 successfully completed escalator modernization installations.

C. Regulatory Requirements: The design and installation of the modernized escalator system shall comply with the latest version of ASME A17.1 in affect at the start of manufacturing.

D. Permits and Inspections: The manufacturer shall provide licenses and permits and perform required inspections and tests.

1.04 REFERENCES

E. ASTM A325M - Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength (Metric); 2014.
1.05 SUBMITTALS
Manufacturer shall submit the following:
A. Product Data: manufacturer’s product data for each system proposed for use, including the following: Samples, color charts, etc. can be entered here.
B. Shop Drawings: layout drawings or product literature including the following:
   1. Maximum loads imposed on the building structure at all support points.
   2. Rise of existing escalator.
   3. Dimensions of existing escalator.
   4. Electrical characteristics and connection requirements of new equipment.
C. Installation methodology and sequence of work in CPM format.
D. Operation and Maintenance Manuals: Provide 2 manufacturer’s standard operation and maintenance manuals.

1.06 DELIVERY, STORAGE, AND HANDLING
A. Should the building or the site not be prepared to receive the escalator equipment on the agreed upon date, the owner or general contractor shall be responsible for providing a suitable storage area on or off the premises.
B. Should the storage area be off site and the equipment not yet delivered, the escalator modernization contractor, upon notification from the owner or general contractor, shall divert the escalator equipment to the storage area at no additional cost to the escalator modernization contractor. If the escalator equipment has already been delivered to the site, the owner or general contractor shall be responsible for transporting the escalator equipment to the storage area. The escalator equipment shall be stored and removed from storage to the job site in a timely manner at no cost to the escalator modernization contractor.

1.07 WARRANTY

A. The escalator modernization contractor guarantees the materials and workmanship of the apparatus furnished under these specifications. The escalator modernization contractor shall make good any defects which may develop within one (1) year from the date of acceptance of each escalator not due to: ordinary wear and tear; vandalism; improper or insufficient maintenance by others; abuse, misuse, or neglect; or any other cause beyond the control of the escalator modernization contractor.

1.08 MAINTENANCE SERVICE

A. The escalator modernization contractor shall provide a quality maintenance service consisting of examination, adjustments, and lubrication of the escalator equipment for a period of twelve (12) months after the escalator has been turned over for customer use. This service shall not be subcontracted but shall be performed by the escalator modernization contractor. All work shall be performed by qualified employees during regular working hours of regular working days and shall include regular time call backs.

B. This service shall not include adjustments, repairs, or replacement of parts due to negligence, misuse, abuse, vandalism or circumstances caused by persons other than the escalator modernization contractor. Only genuine parts and supplies as used in the manufacture and installation of the original equipment shall be used.

PART 2 -- PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Provide new escalator equipment from KONE Inc. or approved equal.

2.02 EQUIPMENT
All new escalator equipment described in this section shall be of the same design as the equipment provided by the escalator modernization contractor in new installation applications.

A. Truss: The existing truss shall be reused. The following work shall be performed:
   1. Upper and Lower End:
      a. Removal of track and support brackets.
      b. Removal of access cover support plates.
      c. Removal of selected truss cross members.
      d. Removal of handrail support return brackets.
   2. Incline:
      a. Removal of top and return track
      b. Removal of handrail return brackets.
      c. Modification to truss cross members.
   3. Clean-down of the existing truss removing all remnants of oil, grease, lint, dirt and debris from the unit.
   4. Inspection/analysis of the existing welds, rivets and overall structure.
B. Isolation Mounting: Existing isolation mounting shall be reused.

C. Upper, Lower, and Incline Modules: Upper, lower, and incline modules shall be designed and fabricated for installation into the existing truss.

1. The upper end module shall include the drive machine, track sub-assemblies, and truss interface components. The track sub-assemblies shall be welded steel plate construction. The left and right hand plates shall be connected by structural steel tube cross members. The following components shall be directly mounted to the upper end module: Top and return curve track; Step guidance system; Handrail guidance system; Skirts and support brackets; Access cover and comb plate support angles; Safety devices and associated mounting brackets, including skirt switches, missing step detector, step out of level detector, and handrail speed sensors.

a. Drive Machine: A totally enclosed, planetary geared machine specially designed for this service shall be furnished. It shall include a drive motor and electro-magnetic brake. The machine shall be mounted in the upper end module to truss interface brackets and integrally attached to the track sub-assembly plates, and be connected by separate direct drive shafts to both the step drive sprocket and the handrail friction drive sheave. Handrail drive chains shall NOT be provided. The drive machine shall be designed to substantially match speeds of the step band and handrails. Lubrication of the gears and bearings shall be by synthetic based oil bath.

b. The escalator(s) shall be equipped with a motor(s) designed for escalator service. The motor shall be of TEFC design, ball bearing type, integrally and horizontally mounted to the drive machine. The motor shall be flange mounted to the main drive gear case and torsionally connected to the gearbox. Driving motor and motor switchgear shall be designed to provide a smooth start, which shall prevent undue strain on drive components. The motor shall be of sufficient size to operate the escalator at a minimum of Code-rated load, ascending without exceeding the rated horsepower.

each escalator shall be provided with a permanent magnet ceramic brake, located on the high speed shaft which, when activated, shall stop the escalator as required by Code, upon activation of a stop button, safety device, or loss of power.

c. Permanent Magnet Ceramic Brake: A load compensating brake system shall be installed. The brake shall be capable of automatically stopping the escalator quickly but gradually, and shall hold the escalator stationary under full load whenever the power is interrupted. The brake shall be "fail safe" and electrically released. The system shall continually adjust brake torque to maintain a relatively constant deceleration independent of the load. The brake shall not cause the escalator to come to an abrupt stop. It shall be designed to meet ASME A17.1-2000 Code deceleration requirements without adjustment.

d. Upper Reversing Station: The Upper Reversing Station and drive shall include a precision-machined step chain sprocket mounted on the machine output shaft and rotating on bearings.

2. The lower end module shall include the reversing station, track sub-assemblies, and truss interface components. The track sub-assemblies shall be welded steel plate construction. The left and right hand plates shall be connected by structural steel tube cross members. The following components shall be directly mounted to the lower end module: Top and return curve track; Step guidance system; Handrail guidance system; Skirts and support brackets; Access cover and comb plate support angles; Safety devices and associated mounting brackets, including skirt switches, missing step detector, step out of level detector, and step up-thrust device.

a. Lower Reversing Station: The Lower Reversing Station shall consist of a machined floating track system designed to maintain proper tension on the step chain by use of springs. It shall be designed to maintain uniform chain tension, and shall detect movement of the carriage through the activation of a safety switch.
3. Incline Modules: Modular multi-purpose stanchion assemblies shall be installed on the incline of the existing truss. These incline support stanchions shall be fabricated of steel and mounted to the existing truss. They shall be designed to support all incline track sections and handrail guide components as part of the complete step band. These stanchions shall be pre-assembled and fixtured to set track spacing, as well as step and handrail guidance components, prior to installation into the existing truss.

D. Step Band

1. Step Guidance: A step guidance system shall be provided to control the movement of the steps both horizontally and vertically. Each step shall be provided with horizontal guide pads, which shall guide the steps throughout their travel, in combination with a continuous guide profile installed in the area of the escalators open to passengers. A17.1-2000 Code Step/Skirt Performance Index requirements shall be met without the need for skirt deflector brushes.

2. Step Chain: The step band shall consist of consecutively running steps powered and spaced with a chain designed for long life and quiet operation. The step chain shall properly mesh with the main drive sprockets and lower reversing station castings. The chain shall be an engineering class roller chain, manufactured to close tolerances, from high quality material with heat-treated bushings, pins, and link plates.
   a. Lubrication-free chain: The escalators shall be designed using Lubrication-free chain. The chain shall be designed to reduce oil use and life cycle costs.

3. Steps: The steps shall be formed from one-piece die cast aluminum with closely spaced tread and riser cleats. Step rollers shall rotate on sealed ball bearings. The step shall be connected to the chain by a pin and bushing. Vertical curved step risers shall be furnished with vertical cleats arranged to pass between the cleats of the tread on the adjacent step to form an inter-meshing unit with minimum clearances.
   a. The number of level steps at each end of the escalator shall be two, wherever possible.
   b. Step demarcation inserts shall be provided on the sides and rear of each step. The inserts shall be fabricated from reinforced structural plastic, shall be easily replaced and shall be approximately 1.5 inches (38mm) wide at the sides and approximately 1.5 inches (38 mm) wide at the rear. Inserts shall be attached to the step without the use of visible fasteners. The color of the demarcation inserts shall be yellow per ASME A17.1-2000.

4. Tracks: New tracks shall be designed and fabricated to support and retain the steps and running gear at the rated load and at the highest speed specified. Tracks shall be assembled and secured together for easy removal and replacement of sections. The system shall be adjustable, with no welding of the track sections at the joints. Tracks shall be properly supported on stanchions to provide correct alignment and smooth transition to return stations. The rolling surface of the incline track shall be a minimum thickness of 3 mm. The transition track shall be a minimum thickness of 10 mm. The guiding surface of the wheels shall be galvanized steel profiles with smooth and even running surfaces. Joints shall be cut diagonally to the running direction. A second, continuous step guiding profile shall be provided above the step chain rollers.

E. Comb plates and Access Covers

1. Comb Plates: Adjustable comb plates shall be located at the top and bottom landings. The comb plates shall support injection molded, reinforced structural plastic comb segments which shall be designed to be removable and to mesh with the cleats on the step treads. The skid resistant comb plates shall be designed to sense both horizontal and vertical movement of the comb segments. Comb segments shall be colored yellow.

2. Access Covers: Lightweight aluminum access covers shall be provided. The design of these skid resistant access covers shall allow for ease of maintenance. These covers shall be provided at both upper and lower landings, and match the pattern of the new comb plates.
   a. Access Cover Extensions: The escalators shall be designed with access cover extensions of adequate length to match existing opening dimensions.
F. Decks/Balustrades/Front plates/Skirts/Interior Trim
   1. Decks: All existing escalator decking shall be removed, and new escalator decking shall be provided in a #4 Stainless Steel finish. The new decking shall be fabricated in such a way so as to interface with the existing escalator cladding / wall finishes, or any required modifications required to match the new decking shall be included in the escalator contractors scope of work.
      a. Newel Ends: Both the upper and lower newel end deck and handrail base shall be new. The new newel ends shall support the handrail around the newel through the use of a new multi-roller bearing system to minimize drag and maximize handrail life.
      b. Handrail Base: New handrail base shall be provided. New plastic handrail guide channels shall also be installed.
         Solid Balustrades: Solid Balustrades shall be provided between the escalator skirts and the handrails. These panels shall provide a finished surface for the escalator interior. Balustrade panels shall be installed without overlapping joints or requiring trim pieces to cover where two panels meet. The balustrade shall be fabricated of sheet metal with stainless steel #4 finish.
   2. Front plates: Stainless steel front plates shall be provided at upper and lower ends designed to include the handrail inlet device and key actuated direction starting switch. The handrail inlet device shall be a four piece door/gate assembly.
      a. Control Station: At both the upper and lower landings, located near the handrail inlet, a station shall be provided which shall include a key actuated direction starting switch. The escalator will not restart automatically. It must be restarted with the key after it has shut down.
   3. Skirts: The skirts shall be constructed from a heavy gauge material reinforced with steel channels. Skirts shall be fastened to the truss modules with hidden fastenings in the incline and transition areas. Skirt panels shall be installed without overlapping joints or requiring trim pieces to cover where two skirt panels meet. The skirt panels will be finished in Teflon coated 11 gauge stainless steel #4 satin finish.
   4. Interior Trim: Interior trim pieces shall be aluminum and designed to connect the skirts and inner panels together.

G. Handrails: Escalator handrails, properly constructed and reinforced, shall be provided. Handrails shall be endless with a smoothly vulcanized splice and shall operate with the moving steps. The handrails shall move on specially formed guides and traction sheaves. These sheaves shall be an integral part of the drive machine. Close fitting guards shall be provided by the handrail openings in the newel base. The handrail color shall be black.

H. Controls and Wiring
   1. Controller: The controller shall be of the microprocessor type. The controller shall monitor the condition of each safety device, brake, and motor operation, and shall cause the escalator to come to a stop upon activation of any safety device, brake problem, or motor overload. Should a power failure occur, the controller shall automatically remove power from the motor, and brake, and bring the escalator to a controlled stop. The controller shall include phase and overload protection.
   2. Wiring: A pre-assembled wiring harness shall be installed, complete with modular assemblies for the upper end, incline section, and lower end of the truss. The upper and lower end assemblies shall be constant and consistent from unit to unit. The incline assembly shall be variable by length only. Both upper and lower harnesses shall have terminal boxes for easy access and troubleshooting capabilities. In conjunction with the low voltage/low power circuitry, S.O. cord shall be installed between terminal boxes and individual safety switches.

I. Safety Devices:
   1. Reversal Stop Device: Each escalator shall be provided with a reversal stop device or function that is controller sensitive to stop the escalator automatically should the escalator attempt to reverse its direction while operating in the ascending direction.
2. Broken Step Chain Device: A broken step chain device, a part of the lower reversing station assembly, shall be provided for each chain. When these devices are activated, the escalator will come to a controlled stop.

3. Step Up-thrust Device: A step up-thrust device shall be located on each side of the lower curve track on the lower end of each escalator. The escalator will come to a controlled stop should a step be displaced against the up thrust track.

4. Comb-Step Impact Device: A comb-step impact device shall be provided at the upper and lower comb plates. The escalator will come to a controlled stop should an impact occur between the comb segments and steps.

5. Skirt Obstruction Device: Skirt obstruction devices shall be provided, at both upper and lower ends, within the skirt panels. The escalator will come to a controlled stop should an obstruction occur between the step and skirt panel. Switches shall be of the plunger, self-resetting type, adjustable to maintain the required position and clearance from the skirts.

6. Missing Step Device: Missing step devices shall be provided. The missing step devices are designed to detect a missing step or steps at the upper and lower ends of the escalator. When these devices are activated, the escalator will come to a controlled stop.

7. Step Demarcation Lights: Step demarcation lights shall be furnished at the top and bottom of each escalator. They shall consist of a light fixture installed just below the track system where the step leaves or enters the comb plate. This fixture shall be furnished with two independent green fluorescent lamps and shall be capable of lighting the entire width of the step. The light, which shall be visible between the steps and the step and comb segment, shall provide a reference point for entering or exiting the escalator.

8. Handrail Entry Device: A handrail entry device shall be provided at the handrail inlet in the newel. The escalator will come to a controlled stop should an object enter the handrail inlet area.

9. Handrail Speed Monitoring Device: A magnetic sensor shall be provided to sound the alarm when the handrail deviates from the step speed by 15% or more. If the deviation lasts for more than 2-6 seconds, the escalator will come to a controlled stop.

10. Emergency Stop Buttons: Emergency stop buttons shall be provided, designed so that the momentary pressure of either button shall cut off the electrical power supply to the motor and bring the escalator to rest.
    a. One emergency stop button shall be located at each landing. Location shall be in the existing newel upper radius quadrant, 45 degrees above horizontal, in order to provide easy access. The stop button shall be red in color.
    b. The button shall be housed under a clear, high impact resistant plastic cover, which shall be self-closing. Instructions for operating the stop button shall be imprinted on the cover in half-inch high letters. When the cover is lifted, an audible alarm shall sound until the cover is returned to its closed position.

11. Safety Signs: A pictorial sign meeting the requirements of the ASME A17.1 Code shall be provided at both the upper and lower landings. The safety signs will be provided in English. (Option French or Spanish)

12. Stop Switch in Machinery Spaces: Each escalator shall be provided with stop switches in the upper and lower pits. When these switches are activated, the escalator will come to a controlled stop.

13. Step Level Devices: Step level devices shall be provided at the upper and lower ends of the escalator to detect downward displacement of the step prior to it reaching the comb plates. When these devices are activated, the escalator will come to a controlled stop.

14. Step Guards: Escalators in this specification are required to have step guards. Step guards will be provided in the upper and lower pit. The step guard will protect a mechanic from the step band.

J. Pre-Assembled Escalator Modules: Escalator modules included in this specification shall be completely pre-assembled by escalator modernization contractor prior to shipment to the job site. Such modules have specific access requirements. In accordance with information provided by the escalator modernization contractor, adequate access to the location of final modernization shall be provided by the general contractor or owner.
PART 3 -- EXECUTION

3.01 PREPARATION

A. Acquire field dimensions and examine condition of truss, supports, and other conditions under which this work is to be performed. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 INSTALLATION

A. Install all escalator components except as specifically provided for elsewhere.
   1. The following items must be complete PRIOR TO DELIVERY AND INSTALLATION:
      a. Barricade Requirements
         OSHA approved safety barricades around all wellway openings.
      b. Access Requirements
         Access to the site must be available.
      c. Protection Requirements
         Provisions to protect the escalator equipment from damage throughout completion of the entire project.
   2. The following items must be complete PRIOR TO FINAL ASSEMBLY:
      a. Site & Storage Requirements
         Working and storage areas clean, dry and protected from the weather.
      b. Power Requirements
         Maintain existing permanent three phase and single phase power for escalator assembly and testing.

3.03 DEMONSTRATION

A. The escalator modernization contractor shall make a final check of each escalator operation with the owner or owner's representative present prior to turning each escalator over for use. The escalator modernization contractor shall determine that control systems and operating devices are functioning in accordance with the specification.