

SPECIFICATIONS & CONTRACT DOCUMENTS FOR THE PROJECT:

**A New Facility for:
FIRE STATION NO. 6
FOR THE**



MAYOR-PRESIDENT
JOSHUA S. GUILLORY

CHIEF ADMINISTRATIVE OFFICER
CYDRA WINGERTER

LAFAYETTE CITY COUNCIL
PATRICK LEWIS – DISTRICT 1
ANDY NAQUIN – DISTRICT 2
LIZ W. HEBERT – DISTRICT 3
NANETTE COOK – DISTRICT 4
GLENN LAZARD – DISTRICT 5

LAFAYETTE PARISH COUNCIL
BRYAN TABOR – DISTRICT 1
KEVIN NAQUIN – DISTRICT 2
JOSH CARLSON – DISTRICT 3
JOHN J. GUILBEAU – DISTRICT 4
ABRAHAM “AB” RUBIN, JR. – DISTRICT 5

DEPARTMENT OF PUBLIC WORKS-DIRECTOR
CHAD NEPVEAUX

FIRE DEPARTMENT- FIRE CHIEF
ROBERT P. BENOIT

PREPARED BY:



5-4-23

Book 1 of 2

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Lafayette Consolidated Government

A New Facility for:

FIRE STATION NO. 6

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS (LCG Specifications)

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IMPORTANT

**IF YOU ARE SUBMITTING A BID FOR LABOR &
MATERIAL PLEASE MAKE SURE THAT:**

**THE COMPANY NAME WHICH APPEARS ON
THE BID ENVELOPE IS THE EXACT SAME
NAME AS THAT FOR WHICH YOU ARE
LICENSED BY THE STATE OF LOUISIANA
LICENSING BOARD;**

**YOU MUST BE LICENSED FOR THE CLASS AS
STATED IN THE NOTICE TO BIDDERS AND
INSURE THAT STATE OF LOUISIANA LICENSE
NUMBER APPEARS ON THE ENVELOPE IF
YOUR BID IS FIFTY THOUSAND DOLLARS
(\$50,000) OR MORE.**

IMPORTANT

IMPORTANT NOTICE REGARDING CORPORATE RESOLUTION

A CORPORATE RESOLUTION OR WRITTEN EVIDENCE OF AUTHORITY AUTHORIZING THE PERSON SIGNING THE BID MUST BE SUBMITTED WITH YOUR BID PURSUANT TO LA. R.S.38:2212 B(5). THIS RESOLUTION OR WRITTEN EVIDENCE OF AUTHORITY MUST BE SIGNED BY AN OFFICER WHO IS CURRENTLY LISTED WITH THE SECRETARY OF STATE. THE AUTHORITY OF THE SIGNATURE OF THE PERSON SUBMITTING THE BID SHALL BE DEEMED SUFFICIENT AND ACCEPTABLE IF THE CONDITIONS LISTED IN THE INFORMATION FOR BIDDERS ARTICLE 2 ARE MET.

FAILURE TO SUBMIT THE CORPORATE RESOLUTION OR WRITTEN EVIDENCE OF AUTHORITY WITH YOUR BID SHALL RESULT IN REJECTION OF YOUR BID.

NOTE: SECRETARY OF STATE BUSINESS LISTING SHALL NOT BE ACCEPTED AS A CORPORATE RESOLUTION.

LAFAYETTE CONSOLIDATED GOVERNMENT CONFLICT OF INTEREST POLICY

TO AVOID ANY POSSIBLE CONFLICTS OF INTEREST, IT IS THE POLICY OF THE LAFAYETTE CONSOLIDATED GOVERNMENT THAT NO DIRECT OR INDIRECT PURCHASES OF ANY GOODS OR SERVICES WILL BE MADE FROM EMPLOYEES.

ACCORDINGLY, IF YOU HAVE RECEIVED THIS BID OR QUOTE PACKAGE, AND IF YOU ARE AN EMPLOYEE OF THE LAFAYETTE CONSOLIDATED GOVERNMENT, OR IF ANY MEMBER OF YOUR COMPANY IS A LAFAYETTE CONSOLIDATED GOVERNMENT EMPLOYEE, PLEASE DO NOT SUBMIT A BID OR QUOTE FOR THE PRODUCT, GOOD, OR SERVICE REQUESTED BECAUSE WE CANNOT, NOR WILL WE ACCEPT THE BID OR QUOTE.

THIS DOCUMENT CONSTITUTES OFFICIAL NOTIFICATION OF THE LAFAYETTE CONSOLIDATED GOVERNMENT'S CONFLICT OF INTEREST POLICY, AND THUS, ESTABLISHES THE REQUIREMENT THAT THE INDIVIDUAL OR COMPANY IN RECEIPT OF THIS REQUEST FOR BID OR QUOTE IS SOLELY RESPONSIBLE FOR NOTIFYING LAFAYETTE CONSOLIDATED GOVERNMENT THAT A CONFLICT OF INTEREST EXISTS.

PLEASE CONTACT THE PURCHASING DIVISION AT (337) 291-8258 AND SPEAK WITH THE INDIVIDUAL ADMINISTERING THE PURCHASING PROCESS.

SECTION I

INFORMATION FOR BIDDERS

ARTICLE 1 - PRINTED FORM FOR BID

Bids must be submitted on the Bid Form found in the Contract Documents. Bids should be clearly and legibly filled out in ink and/or typewritten and must contain the signature or facsimile thereof of the Bidder or an authorized representative. Lafayette Consolidated Government shall have the right to reject any bid in the event that it is unable to reasonably determine the information and bids supplied by the Bidder as a result of the manner and method by which the Bidder has completed the Bid Form.

Each bid shall be enclosed in a sealed envelope showing the name and address of the Bidder, as well as, its Louisiana Contractor's License Number, and shall be mailed to Lafayette Consolidated Government, Purchasing Division, P.O. Box 4017-C, Lafayette, LA 70502, or hand delivered to Lafayette Consolidated Government, Purchasing Division, 705 W. University Avenue, Lafayette, Louisiana, and show the name of the bid on the outside of the envelope.

In the event that the Detailed Specifications, Information for Bidders or Special Conditions differ from the General Conditions, the Special Conditions shall take precedence over the Detailed Specifications. The Detailed Specifications shall take precedence over the Information for Bidders and General Conditions. The Information for Bidders shall take precedence over the General Conditions.

ARTICLE 2 - SIGNATURE AUTHORITY OF BIDDER

In accordance with *LRS Title 38§2212(B)5*,

Corporate resolution or written evidence of authority authorizing the person signing the bid must be submitted with your bid pursuant to La. R.S. 38§2212(B)5. This resolution or written evidence of authority must be signed by an officer or the registered agent of the company who is currently listed with the Secretary of State. The authority of signature of the person submitting the bid shall be deemed sufficient and acceptable if any of the following conditions are met:

- (a) The signature on the bid is that of any corporate officer listed on the most current annual report on file with the secretary of state, or the signature on the bid is that of any member of a partnership, limited liability company, limited liability partnership, or other legal entity listed in the most current business records on file with the secretary of state.
- (b) The signature on the bid is that of an authorized representative as documented by the legal entity certifying the authority of the person.
- (c) The legal entity has filed in the appropriate records of the secretary of state of this state, an affidavit, resolution, or other acknowledged or authentic document indicating the names of all parties authorized to submit bids for public contracts. Such document on file with the secretary of state shall remain in effect and shall be binding upon the principal until specifically rescinded and canceled from the records of the office.

Failure to submit the corporate resolution or written evidence of authority with your bid shall result in rejection of your bid.

NOTE: Secretary of State business listing shall not be accepted as a corporate resolution

ARTICLE 3 - SUBMISSION OF BID

Bids will be received either electronically at <https://lcgprod-lm01.cloud.infor.com:1442/lmscm/SourcingSupplier/html/SourcingSupplier?csk.SupplierGroup=100&csk.CHP=lmscm> or in the office of the Purchasing Manager and will at that time and location, be opened and publicly read aloud as stated in the Bid Notice. **It is the sole responsibility of the Bidder to see that his bid is delivered to the Purchasing Agent before the scheduled date and time of the bid opening.** Any bid received after the scheduled closing time for receipt of bids will be returned unopened to the Bidder. A conditional or qualified bid will not be accepted.

ARTICLE 4 - OPENING OF BIDS

Bids will be publicly opened and read aloud at the date and time set forth in the Notice to Bidders. Bidders who do not submit bid security, when required, shall cause rejection of their bid.

ARTICLE 5 - DETERMINATION OF BID PRICES

In unit price bids, the total amount quoted shall be in the sum of the correct extensions of the unit price bid on each item of work, multiplied by the estimated contract quantity of work shown for the respective item. Each extension shall be carried to one hundredth of a dollar, and the last digit in the extension (or cents place) shall not be rounded off; i.e., any portion of a cent appearing in the extended amount shall be dropped from the amount. The determination of bid for award of a Contract shall be made by the summation of extensions of all unit prices to reach a total amount bid.

When called for on the Bid Form, prices should be shown both in words and in figures. In the event of a discrepancy between the prices quoted in words and those quoted in figures in the bid, the words shall govern. In the event that the Bidder does not show prices in both words and in figures, the bid shall be tabulated in accordance with the form of the price provided. In case of a conflict between unit prices and the extended total price, the unit price shall govern.

The prices are to include the furnishing of all materials, plant, equipment, tools and all other facilities, and the performance of all labor services necessary or proper for the completion of the work except as may be otherwise expressly provided in the Contract Documents.

ARTICLE 6 - ALTERATIONS IN BIDS

The Contractor's Bid Form invites bids on definite plans and specifications. Only the amounts and information asked in the Bid Form furnished herein will be considered as the bid. Each Bidder shall bid upon the work exactly as specified and as provided in the bid.

ARTICLE 7 - ERASURES

Bidders should avoid making mistakes, delineations or other corrections on bids, since such may make it difficult for Lafayette Consolidated Government to ascertain the information contained in the bid. In the event that a Bidder must make such corrections to a bid, the corrections should be made in such a manner that the information contained on the Bid Form can be fairly and reasonably discerned and ascertained by Lafayette Consolidated Government. Lafayette Consolidated Government shall have the right to reject any bid in the event that it is unable to reasonably determine the information and bids supplied by the Bidder therein.

ARTICLE 8 - REJECTION OF BIDS

The Consolidated Government reserves the right to reject any and all bids for just cause in accordance with LA R.S. 38§2214.B. The Consolidated Government also reserves the right to reject any and all bids should the total bid be in excess of appropriated funds and additional funding cannot be made available. Without limiting the generality of the foregoing, any bid which is incomplete, obscure, or irregular may be rejected; any bid which omits a bid on any one or more items in the Bid Form may be rejected; any bid in which unit prices are omitted or in which unit prices are

obviously unbalanced may be rejected; any bid accompanied by an insufficient or irregular bid security may be rejected.

ARTICLE 9 - ACCEPTANCE OF BID

Within forty-five (45) calendar days after the date of opening of the bids, unless mutually extended, Lafayette Consolidated Government will act upon them. The acceptance of the bid will be a Notice of Acceptance in writing signed by a duly authorized representative of Lafayette Consolidated Government. The acceptance of the bid shall bind the successful Bidder to execute the Contract and to be responsible for liquidated damages as provided for herein.

The rights and obligations provided for in the Contract shall become effective and binding upon the parties only upon its formal execution.

ARTICLE 10 - TIME FOR EXECUTING CONTRACT AND DAMAGES FOR FAILURE TO EXECUTE

Any Contractor whose bid is accepted shall be required to execute the Contract within ten (10) days (unless an extension of time is granted by Lafayette Consolidated Government) after notice that the Contract has been awarded to him. Failure or neglect to do so shall constitute a breach of the agreement affected by the acceptance of the bid.

The damages to Lafayette Consolidated Government for such breach shall include loss from interference with his construction program and other items, the accurate amount of which will be difficult or impossible to compute. The amount of bid security accompanying the bid of such Bidder shall be retained or proceeded against as liquidated damages for such breach. In the event any Contractor whose bid is accepted shall fail or refuse to execute the Contract as herein before provided, Lafayette Consolidated Government at its option may determine that such Contractor has abandoned the Contract and thereon the bid and the acceptance therefore shall be null and void and Lafayette Consolidated Government will be entitled to liquidated damages.

ARTICLE 11 - QUALIFICATION OF BIDDER

The Lafayette Consolidated Government may make such investigation as it deems necessary to determine whether a bidder is "responsible bidder" and qualified to perform the work. Bidder shall furnish to Lafayette Consolidated Government all such information and data as Lafayette Consolidated Government may reasonably request prior to award. Prior to any disqualification on the basis that a bidder is not responsible, the bidder shall be entitled to an informal hearing in accordance with LA R.S. 38§2212.X.

ARTICLE 12 - BID SECURITY

Each bid shall be accompanied by a certified check, cashier's check, or bid bond payable to the Lafayette Consolidated Government, State of Louisiana, the amount of which shall be five percent (5%) of the base bid plus any additive alternates. Any Bidder not furnishing bid security, when required, may cause rejection of his bid.

The successful Bidder's Bid Security shall be given as a guarantee that the Bidder shall execute the Contract, should it be awarded to him, in conformity with the Contract Documents. Should Lafayette Consolidated Government make an award to a Bidder who refuses to enter into a Contract, the bid security shall be forfeited to Lafayette Consolidated Government as liquidated damages.

The successful Bidder's Bid Security will be retained until he has entered into a satisfactory Contract. Lafayette Consolidated Government reserves the right to hold the Bid Security of the three lowest bidders until the successful Bidder has entered into a Contract and furnished performance and payment bonds, each in the amount of 100% of the Contract Price, with a corporate surety approved by Lafayette Consolidated Government.

If a bid bond is used, it shall be written by a surety or insurance company that is in good standing and currently licensed to write surety bonds in the State of Louisiana by the Louisiana Department of Insurance and also conforms

to the requirements of LA. R.S. 38:2218. The bid bond must be equivalent to five percent (5%) of the base bid plus any additive alternates, but does not have to specify the amount in dollars and cents.

It is requested that agents signing bonds, type their name and license number below their respective signature.

ARTICLE 13 - POWER OF ATTORNEY

Attorneys-in-fact who sign bid bonds or Contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

ARTICLE 14 - WITHDRAWAL OF BID

A bid containing patently obvious unintentional, and substantial mechanical, clerical, or mathematical errors, or errors of unintentional omission of a substantial quantity of work, labor, material, or services made directly in the compilation of the bid, may be withdrawn by the contractor if clear and convincing sworn, written evidence of such errors is furnished to Lafayette Consolidated Government within forty-eight (48) hours of the bid opening excluding Saturdays, Sundays, and legal holidays. Such errors must be clearly shown by objective evidence drawn from inspection of the original work papers, documents, or materials used in the preparation of the bid sought to be withdrawn. If Lafayette Consolidated Government determines that the error is a patently obvious mechanical, clerical, or mathematical error, or unintentional omission of a substantial quantity of work, labor, material, or services, as opposed to a judgment error, and that the bid was submitted in good faith it shall accept the withdrawal and return the bid security to the contractor.

A contractor who attempts to withdraw a bid under the provisions of this Section shall not be allowed to resubmit a bid on the project. If the bid withdrawn is the lowest bid, the next lowest bid may be accepted. If all bids are rejected no withdrawal of the bid which would result in the award of the contract on another bid of same bidder, his partner, or to a corporation or business venture owned by or in which he has an interest shall be permitted. No bidder who is permitted to withdraw a bid shall supply any material or labor to, or perform any subcontract work agreement for, any person to whom a contract or subcontract, is awarded in the performance of the contract for which the withdrawn bid was submitted.

ARTICLE 15 – POSTPONEMENT OF DATE FOR PRESENTING AND OPENING BIDS

Lafayette Consolidated Government reserves the right to postpone the date for receipt and opening of bids and will give written or telegraphic notice of any such postponement to all persons to whom drawings and specifications have been issued, at any time prior to the scheduled closing time for receipt of bids.

ARTICLE 16 - ADDENDA

Bidders desiring further information, or interpretation of the plans or specifications, must make written request for such information to the Purchasing Division at least seven (7) working days before the bid opening. Answers to all such requests will be given in writing to all Bidders, in addendum form, and all addenda will be bound with, and made part of, the Contract Documents. No other explanation or interpretation will be considered official or binding.

Should a Bidder find discrepancies in, or omissions from the plans or specifications or other Contract Documents, or should he be in doubt as to their meaning, he should at once notify the Purchasing Division in order that a written addenda may be sent to all Bidders. Any addenda modifying plans and specifications within a period of seven (7) working days prior to the time for the opening of bids shall be sent to prime bidders who have requested bid documents. The addendum may be delivered by facsimile transmission, e-mail, other electronic means, or by hand and shall also be sent by regular mail.

The bid as submitted by the Contractor will be construed as to include any addenda if such are issued by the Purchasing Division prior to seventy-two (72) hours of the opening of bids. If the necessity arises to issue an addendum modifying plans and specifications within a seventy-two (72) hour period prior to the advertised time for

the opening of bids, then, the bid opening shall be extended for at least seven (7) working days, but not more than twenty-one (21) working days, without the requirement of re-advertising.

ARTICLE 17 - LAWS AND REGULATIONS

The Bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract.

ARTICLE 18 - BRAND NAME SPECIFICATIONS

In accordance with LA R.S. 38§:2295:

1. The name of a certain brand, make, manufacturer, or definite specification is utilized, it is to denote the quality standard of article desired, but does not restrict Bidders to the specific brand, make, manufacturer, or specification named; it is to set forth and convey to prospective Bidders the general style, type, character, and quality of article desired.
2. When in specifications or contract documents a particular brand, make of material, device or equipment is shown or specified, such brand, make of material, device or equipment shall be regarded merely as a standard.
 - (b) When in specifications or contract documents an architect or engineer specifies a particular brand, make of material, device or equipment, or equal thereto, he shall adequately identify said product by including, minimally, the model or catalog number of the product.
 - (c) If a potential supplier wishes to submit for prior approval a particular product other than a product specified in the contract documents, he shall do so no later than seven working days prior to the opening of bids. Within three days, exclusive of holidays and weekends, after such submission, the prime design professional shall furnish to both the public entity and the potential supplier written approval or denial of the product submitted.

ARTICLE 19 - CONTRACTOR'S LICENSE

On any bid submitted in the amount of \$50,000 or more, the Contractor shall certify that he is licensed under Louisiana's Contractor's Licensing Law R.S. 37§2150-2164 and shall show his license number on the sealed envelope submitting the bid.

ARTICLE 20 - AFFIDAVIT OF NON-COLLUSION

In accordance with Louisiana Law, if the Contract is awarded to the Bidder, he shall, at the time of the signing of the Contract, execute the Affidavit of Non-Collusion included in the Contract Documents.

ARTICLE 21 - AWARD

This bid will be awarded on a basis of the sum of the base bid, and (when applicable) any alternates if alternates are accepted, to the low responsible Bidder who has bid according to the Contract, plans and specifications as advertised. Alternates, if accepted, shall be accepted in the order in which they are listed on the Bid Form. However, Lafayette Consolidated Government reserves the right to accept alternates in any order which does not affect determination of the low Bidder.

ARTICLE 22 - NOTICE TO PROCEED

No work on this Contract shall commence until Lafayette Consolidated Government has issued a written "Notice to Proceed" directing the Contractor to proceed according to the Contract Documents.

The Contractor will be required to commence work under this Contract within ten (10) calendar days from date of receipt of the written Notice to Proceed, and he shall be required to complete all work on the project within the number of days stated on the Contract Form.

ARTICLE 23 - PRE-CONSTRUCTION CONFERENCE

After award of the contact, Lafayette Consolidated Government will schedule a preconstruction conference. The preconstruction conference will be held prior to performing any work in the project, preferably no later than the issuance of a Notice to Proceed. Lafayette Consolidated Government will schedule the conference sufficiently in advance to permit the attendance of all parties concerned. The contractor is urged to have all subcontractors in attend the preconstruction conference.

ARTICLE 24 - PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISES BUSINESS

The Lafayette Consolidated Government strongly encourages the participation of DBEs (Disadvantaged Business Enterprise) in all contracts or procurements let by the Lafayette Consolidated Government for goods and service and labor and material. To that end, all contractors and suppliers are encouraged to utilize DBEs business enterprises in the purchase or sub-contracting of materials, supplies, services and labor and material in which disadvantaged businesses are available. Assistance in identifying said businesses may be obtained by calling (337) 291-8410.

ARTICLE 25 – SMOKE-FREE WORKPLACE

The Lafayette Consolidated Government is a smoke-free environment and, as such, prohibits smoking in all facilities for events including, but not limited to, conferences, meetings, seminars, etc. Please abide by this policy when in our facilities.

NOTICE TO BIDDERS

Notice is hereby given that sealed bids will be received either electronically at <https://lccprod-lm01.cloud.infor.com:1442/lmscm/SourcingSupplier/html/SourcingSupplier?csk.SupplierGroup=100&csk.CHP=lmscm> or in the office of the Purchasing Division at the Lafayette Consolidated Government Building, located at 705 West University Avenue, Lafayette, Louisiana, until 10:00 AM Central Time on the 17th day of October, 2023 for the following:

A New Facility for Fire Station No. 6 (PW# 1839)

and will, shortly thereafter, be opened and read aloud in Office of Purchasing located at 705 West University Avenue, Lafayette, LA. Bids received after the above specified time for opening shall not be considered and shall be returned unopened to the sender. Due to social distancing practices in place in response to COVID-19 and limited meeting spaces, bidders are highly encouraged to call into the bid openings at the following phone number 337-291-5100.

Scope of Services: The scope of work for this contracts includes but is not limited to the ground up construction of a new Fire Station #6 for the Lafayette Fire Department, which will include all services providing a fully functional fire station. Work shall include, but is not limited to: A new Metal and CMU framed, Brick and Metal wall panel clad, metal roof truss, asphalt shingle roofed building. Exterior work to include landscaping, concrete paving, and lawn equipment shed. Building shall be equipped with sprinkler system, fire alarm system, and a natural gas-powered electric generator. All work to be completed within 365 calendar days from issuance of Notice to Proceed.

In accordance with Louisiana RS 38:2212., vendors may submit their bid electronically **at the website listed above**. Bidding Documents are available to view only at the website. Bidders may request the electronic bid package from Trahan Architecture + Planning, LLC, telephone number (337) 504-7580 and/or email: russell@trahanarchitecture.com.

Bidders wishing to submit their bid electronically must first be registered online with Lafayette Consolidated Government as a potential supplier at the website listed above.

Bidders submitting bids electronically are required to provide the same documents as bidders submitting through the mail as soon as available. Only a bid bond, certified check or cashier's check shall be submitted as the bid security. Electronic copies of both the front and back of the check or bid bond shall be included with the electronic bid.

At the time of the pre-bid and bid dates, Attendees shall be required to comply with requirements mandated by Lafayette Consolidated Government regarding Covid 19 procedures and policies.

Bids must be signed in accordance with LRS Title 38:2212(B)5. A Corporate Resolution or Certificate of Authority authorizing the person signing the bid is required to be submitted with bid. Failure to submit a Corporate Resolution or Certificate of Authority with the bid shall be cause for rejection of bid.

Copies of the bidding documents are available at the office of Trahan Architecture + Planning, LLC, located at 819 Saint John St, Lafayette LA 70501 upon payment of Three Hundred and Ten Dollars (\$310.00) per set, non-refundable, made payable to the Lafayette Consolidated Government. NOTE: NO CASH WILL BE ACCEPTED - ONLY CHECKS OR MONEY ORDERS MADE PAYABLE TO LAFAYETTE CONSOLIDATED GOVERNMENT. Bid Documents shall be available until twenty-four hours before the bid opening date. An electronic copy of the bidding documents may be requested by emailing request to russell@trahanarchitecture.com. Questions relative to the bidding documents shall be addressed to Trahan Architecture + Planning, LLC, telephone number (337) 504-7580.

Contractors are requested to attend a pre-bid meeting which will be held on Wednesday, October 4th, 2023 at 10:00 AM in the large conference room, Lafayette Consolidated Government, Public Works Administration Building located at 1515 East University Avenue, Lafayette, LA.

Each bid shall be accompanied by a certified check, cashier's check, or bid bond payable to the Lafayette Consolidated Government, the amount of which shall be five percent (5%) of the base bid plus additive alternates. If a bid bond is used, it shall be written by a surety or insurance company currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register, or by a Louisiana domiciled insurance company with at least an A-Rating in the latest printing of the A.M. Best's Key Rating Guide to write individual bonds up to ten percent (10%) of policyholders' surplus as shown in the A.M. Best's Key Rating Guide, or by an insurance company in good standing licensed to write bid bonds which is either domiciled in Louisiana or owned by Louisiana residents. The bid bond shall be issued by a company licensed to do business in Louisiana. The certified check, cashier's check, or bid bond shall be given as a guarantee that the bidder shall execute the contract, should it be awarded to him, in conformity with the contract documents within ten (10) days.

No bidder may withdraw his bid for at least forty-five (45) days after the time scheduled for the opening of bids. Each bid shall be submitted only on the bid form provided with the specifications. The successful bidder will be required to execute performance and labor and material payment bonds in the full amount of the contract as more fully defined in the bid documents.

Bids will be evaluated by the Purchaser based on the lowest responsible and responsive bid submitted which is also in compliance with the bid documents. The Lafayette Consolidated Government reserves the right to reject any and all bids for just cause in accordance with LA R.S. 38§2214.B.

Bidders or firms submitting bids in the amount of \$50,000.00 or more shall certify that they are licensed contractors under Chapter 24 of Title 37 of the Louisiana Revised Statutes of 1950 and show their license number on the front of the sealed envelope in which their bid is enclosed. Bidders shall be licensed for the classification of **"BUILDING CONSTRUCTION"**. Bids in the amounts specified above which have not bid in accordance with the requirements, shall be rejected and shall not be read. Additional information relative to licensing may be obtained from the Louisiana State Licensing Board for Contractors, Baton Rouge, Louisiana.

The Lafayette Consolidated Government strongly encourages the participation of DBEs (Disadvantaged Business Enterprises) in all contracts or procurements let by the Lafayette Consolidated Government for goods and services and labor and material. To that end, all bidders and suppliers are encouraged to utilize DBEs business enterprises in the purchase or sub-contracting of materials, supplies, services and labor and material in which disadvantaged businesses are available. Assistance in identifying said businesses may be obtained by calling 291-8410.

PURCHASING DIVISION
Lafayette Consolidated Government

PUBLISH DATES: 9/13/23, 9/17/23, 9/24/23
DPR 976442

**SECTION VI
GENERAL CONDITIONS
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ARTICLE 1 - CONTRACT AND CONTRACT DOCUMENTS

The Contract Documents consist of the Notice to Bidders, Information for Bidders, General Conditions, Special Conditions, Specifications, Drawings, Contractor's Bid Form, Bid Security, Contract Form, Affidavit of Non-Collusion, Performance and Payment Bonds, Insurance Certificate, Addenda, including all properly authorized modifications thereof incorporated in the documents before their execution and all properly authorized modifications made subsequent thereto.

ARTICLE 2 - DEFINITIONS

The following terms as used in this contract are respectively defined as follows:

- a) "Bidder" - Any individual, firm or corporation submitting a proposal for the work contemplated acting directly or through a duly authorized representative.
- b) "Contractor" - A person, firm or corporation with whom the contract is made by the Owner.
- c) "Engineer/Architect" - The Engineer/Architect for the Lafayette City-Parish Consolidated Government or his authorized representative.
- d) "Inspector" - An authorized representative of the Engineer/Architect assigned to make any and all inspections of the work performed and the materials furnished by the Contractor.
- e) "Or Equal" - The Engineer/Architect shall be the sole judge of the quality and suitability of any proposed substitution.
- f) "Owner" - Lafayette City-Parish Consolidated Government.
- g) "Subcontractor" - A Person, firm or corporation supplying labor for work at the site of the project, for and under separate contract or agreement with the Contractor.
- h) "Surety" - Any firm or corporation which is bound with and for the Contractor, who is primarily liable, and which engages to be responsible for his payment of all obligations pertaining to and for his acceptable performance of the work for which he has contracted.
- i) "Work" - Work to be performed at the location of the project, including the transportation of materials and supplies to or from the location of the project by employees of the Contractor and Subcontractor.
- j) "Written Notice" - Written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by certified mail to the last business address known to him who gives the notice.

k) “Satisfactory” - Shall mean satisfactory to the Engineer/Architect and Owner.

ARTICLE 3 - EXECUTION AND INTENT OF CONTRACT DOCUMENTS

The successful bidder will be required to execute the contract and furnish performance and payment bonds satisfactory to the Owner within ten (10) calendar days (unless an extension of time is granted by Owner) after receipt of notice of award.

The intent is to prescribe a complete work or improvement which the Contractor undertakes to do in full compliance with the Contract Documents. The Contractor shall perform all items of work covered and stipulated in the contract and perform extra work and shall furnish, unless otherwise specifically provided in the contract, all materials, implements, machinery, equipment, tools, supplies, transportation, labor, etc. necessary for the prosecution of the work.

Any items omitted from the specifications which, in accordance with good standard construction practices, are necessary for a complete and operative installation shall be included in the work as though such items were set out in the Contract Documents.

The Contractor shall not perform any part of the Work where it knows that the Contract Documents contain an error, inconsistency or omission. If the Contractor violates this requirement, Contractor shall be responsible for the cost of correcting the Work affected by the errors, inconsistencies or omissions.

ARTICLE 4 – BIDDER’S UNDERSTANDING

By submitting a bid, the Bidder stipulates, acknowledges, and agrees that by careful examination, he has satisfied himself as to the nature, location and risks inherent in the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of the equipment and facility needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this Contract. No verbal agreement or conversation with any officer, agent or employee of the Owner, either before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

The Bidder is required to examine carefully the site of the proposed work as well as the proposal, plans, specifications, special provisions and contract and bond form for the work contemplated. By submitting a bid, the Bidder stipulates and agrees that he has investigated and satisfied himself as to the conditions to be encountered, as to the character, quality, and quantities of work to be performed and materials to be furnished and as to the requirements of these specifications, special provisions, and the contract. Bidder further agrees that if his bid is accepted, he will provide all necessary machinery, tools, apparatus, and other means of construction and will perform and complete all work and furnish all material specified and required in the contract, in the manner and within the time limits prescribed in the contract, and in accordance with all requirements therein set forth; and agrees to accept as full compensation therefore, the total price bid whether computed on a lump sum basis or a unit price basis

ARTICLE 4A – WITHDRAWAL OF BID

A bid containing patently obvious unintentional, and substantial mechanical, clerical, or mathematical errors, or errors of unintentional omission of a substantial quantity of work, labor, material, or services made directly in the compilation of the bid, may be withdrawn by the contractor if clear and convincing sworn, written evidence of such errors is furnished to Owner within forty-eight (48) hours of the bid opening excluding Saturdays, Sundays, and legal holidays. Such errors must be clearly shown by objective evidence drawn from inspection of the original work papers, documents, or materials used in the preparation of the bid sought to be withdrawn. If the Owner determines that the error is a patently obvious mechanical, clerical, or mathematical error, or unintentional omission of a substantial quantity of work, labor, material, or services, as opposed to a judgment error, and that the bid was submitted in good faith it shall accept the withdrawal and return the bid security to the contractor.

A contractor who attempts to withdraw a bid under the provisions of this Section shall not be allowed to resubmit a bid on the project. If the bid withdrawn is the lowest bid, the next lowest bid may be accepted. If all bids are rejected no withdrawal of the bid which would result in the award of the contract on another bid of same bidder, his partner, or to a corporation or business venture owned by or in which he has an interest shall be permitted. No bidder who is permitted to withdraw a bid shall supply any material or labor to, or perform any subcontract work agreement for, any person to whom a contract or subcontract, is awarded in the performance of the contract for which the withdrawn bid was submitted.

ARTICLE 5 - CONSTRUCTION SCHEDULE, COMPLETION AND STIPULATED DAMAGES

The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure substantial completion thereof in the time specified. It is expressly understood and agreed by and between the Contractor and the Owner that the time stipulated for the completion of the job takes into consideration the potential that adverse weather conditions and industrial conditions may cause delays in prosecution of the work, and the Contractor stipulates and agrees that weather conditions and industrial conditions shall not constitute grounds for extension of the time for substantial completion of the work contemplated under the contract unless authorized by the Owner.

All changes or extensions of the schedule shall be made by written and approved change orders. The scheduled work may be started after the written Notice to Proceed and contract time will officially begin ten (10) calendar days after the date of the Notice to Proceed. All work shall be completed as per schedule.

For each calendar day or working day, as the case may be, that any work remains incomplete after expiration of the contract time and/or any extensions thereof, the sum specified below will be deducted from payments due the Contractor not as a penalty but as liquidated damages as a result of the delay in substantial completion of the work. In the event that the Owner should choose to permit the Contractor to continue the work after expiration of the contract time, or as such contract time may be extended, such will not operate as a waiver by the Owner of its rights to recover stipulated damages. In the event that the Owner terminates the Contractor under the contract in accordance with the provisions of Article 23, *infra*, the Owner shall retain the right to assess, collect, and recover stipulated damages from the Contractor and/or the Surety until the

work under the contract is satisfactorily completed. The amount of stipulated damages will be deducted from the remaining balance of funds due the Contractor under the contract. In the event that liquidated damages which accrue prior to completion of the work under the contract should exceed the remaining balance of funds due the Contractor under the contract, the Contractor shall forfeit any rights to claim additional payments under the contract and both the Contractor and his Surety shall be liable for accrued stipulated damages in excess of the contract balance. If stipulated damage figures are not set forth in the Special Conditions, the following amounts shall be applicable.

Original Contract Amount		Liquidated Damages Per Day	
From More Than	To and Including	Per Calendar Day	Per Working Day
\$0	\$25,000	\$600	\$600
\$25,001	\$50,000	\$800	\$800
\$50,001	\$100,000	\$1000	\$1000
\$100,001	\$500,000	\$1500	\$1500
\$500,001	\$1,000,000	\$2000	\$2000
\$1,000,001	\$2,000,000	\$2500	\$2500
\$2,000,001	\$5,000,000	\$3000	\$3000
\$5,000,001	\$10,000,000	\$4000	\$4000
\$10,000,001	And over	\$5000	\$5000

If the Owner has accepted a portion of the project as Substantially Complete and assumed partial occupancy of the project, then stipulated damages will be prorated by an amount equal to the percentage of completion.

ARTICLE 6 - CONTRACT TIME

The number of days allowed for substantial completion of the work to be performed by the Contractor in accordance with the terms of the contract shall be the "contract time." The contract time shall be measured by the working day or calendar day, as stipulated elsewhere herein.

When the contract time is on a calendar day basis, it shall consist of the number of calendar days stated in the contract beginning with the date noted in the written Notice to Proceed, including Saturdays, Sundays, holidays and non-work days.

When the contract time is on a working day basis, a work day shall consist of a calendar day, other than exceptions stated below, on which weather and other conditions not under the control of the Contractor, will permit construction operations to proceed for at least five (5) continuous hours of the day with the normal working force engaged in performing the controlling items of work. The scheduled work may be started after the written Notice to Proceed and contract time will officially begin ten (10) days after the date of the Notice to Proceed.

No working days will be charged for the days listed below on a working day basis:

- (a) Saturday - (If no inspector is needed and the work progresses for a period of 5 hours or

- more).
- (b) Sunday - (If no inspector is needed and the work progresses for a period of 5 hours or more).
- (c) Owner recognized holidays
- (1) New Year's Day - January 1st
 - (2) Martin Luther King Day - 3rd Monday in January
 - (3) Mardi Gras Day
 - (4) Good Friday
 - (5) Memorial Day
 - (6) Independence Day - July 4th
 - (7) Labor Day - 1st Monday in September
 - (8) Thanksgiving Day - 4th Thursday in November
 - (9) Acadian Day - Day after Thanksgiving Day
 - (10) Christmas Eve – December 24th
 - (11) Christmas Day - December 25th

Holidays falling on a Saturday shall be observed on the preceding Friday and holidays falling on a Sunday shall be observed on the following Monday.

- (d) Days of which delay, attributable solely to the Owner or other governmental agencies, prevent the Contractor from proceeding with the controlling items of work in effect at time of delay.
- (e) Days on which delays are attributable to the direct effect of strike, riots or civil commotions.

The following are considered reasonably anticipated days of adverse weather on a monthly basis for either a working day or calendar base contract:

January	10 days	May	5 days	September	4 days
February	9 days	June	6 days	October	3 days
March	8 days	July	6 days	November	7 days
April	7 days	August	5 days	December	7 days

The Contractor shall ask for total adverse weather days, the Contractor's request shall be considered only for days over the allowable number of days stated above.

If adverse weather conditions are the basis for a claim for additional time, the Contractor shall document that weather conditions had an adverse effect on the scheduled construction. An increase in contract time due to weather shall not be cause for an increase in the contract sum.

ARTICLE 7 - DELAYS AND EXTENSION OF TIME

The Owner reserves the right, at its sole option, and for good cause shown, to grant to the Contractor additional time for completion of the contract. Any and all granting of additional time for completion of the work under the contract must be initiated by written request from the Contractor to the Engineer/Architect. For the request to be considered, it must be received by the Engineer/Architect no later than fourteen (14) calendar days following the time that the event which prompted the request occurs. It is the Contractor's responsibility to include in the written request the specific and detailed reasons that he feels he deserves additional contract days in order to complete the contract.

No such extension shall be made for delay occurring more than fourteen (14) calendar days before claim therefore is made in writing to the Engineer/Architect.

ARTICLE 8 - ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

The Contractor will be furnished any additional instructions and detail drawings which may be necessary to carry out the work included in the contract. The additional drawings and instructions supplied to the Contractor shall be deemed to be a part of the Contract Documents and will be so prepared that they can be reasonably interpreted as part thereof. The Contractor shall carry out the work required in accordance with the additional detailed drawings and instructions. If the additional instructions and detail drawings adds work not previously shown and reasonably anticipated, the Contractor will be paid under the contract in accordance with the provisions of Article 19 and 20 of these General Conditions.

ARTICLE 9 - SHOP DRAWINGS

The Contractor shall submit promptly to the Engineer/Architect five (5) copies of each shop drawing prepared if submitted in paper format. However, if submitted in digital format the requirement for the number of copies of paper format submitted is waived. After review of such drawings by the Engineer/Architect and dependent upon the extent of the review comments, the drawings will be stamped as "Note Markings" or "Revise and Resubmit". If the Engineer/Architect has to review shop drawing submittals more than three (3) times (two rejection and one approval) then the Engineer/Architect will be compensated for any additional review time by the contractor. Copies of the final approved shop drawings with all applicable mark-ups will be considered the "Record" copies of the shop drawings.

ARTICLE 10 - MATERIALS, SERVICES, FACILITIES AND EMPLOYEES

It is understood that except as otherwise specifically stated in the contract documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, lights, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete and deliver the work within the specified time.

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of a good quality. The Contractor shall, if required, furnish to the Engineer/Architect or the

Owner satisfactory evidence as to the kind and quality of materials.

Where materials or equipment are specified by a trade or brand name, it is not the intention of the Owner to discriminate against an equal product; another manufacturer, but rather to set a definite standard of performance.

Whenever a material or article required is specified or shown on the plans by using the name of the proprietary product or a particular manufacturer or vendor, any material or article which will perform adequately the duties imposed by the general design will be considered equal and satisfactory providing the materials or the article so proposed is of equal substance and function in the Engineer's/Architect's opinion. Substituted material shall not be purchased or installed without the Engineer's/Architect's written approval.

Any request for approval of a different material or article than that specified by name shall be accompanied by samples, complete record of performance, certified copies of test and/or any analyses made by impartial recognized laboratories, or such additional information as the Engineer may reasonably request. Such samples and data shall be furnished sufficiently in advance to allow reasonable time for investigation of the proposed substitution before a decision must be made. Contractor shall be required to provide the same warranty for the substitution as that which is specified in the Contract Documents. Any cost incurred in making modifications or changes to the Project to accommodate an approved substitution are the responsibility of Contractor and shall not be the basis of an adjustment of the Contract sum.

Any work specified and/or identified in the Special Conditions to be performed after regular working hours, on weekends or legal holidays, shall be performed without additional expense to the Owner.

The Contractor shall at all times enforce strict discipline and order amongst his employees and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him.

ARTICLE 11 - INSPECTION AND TESTING OF MATERIALS

All materials and equipment used in the construction of the project shall be new and subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner for Quality Assurance purposes only. The Contractor shall employ a laboratory and/or inspection agency for all Quality Control inspection and testing. The Contractor's Quality Control agency shall not be the same or employed by the Owner's Quality Assurance agency. The Owner will pay for all laboratory/field inspection and testing services for Quality Assurance purposes, and not as a part of the contract. The Contractor will pay for all laboratory/field inspection and testing services for Quality Control purposes at their cost. Testing results as established by the Owner's Quality Assurance laboratory shall be used to determine whether or not the product meets specifications. In the event a particular test fails due to failure to meet requirements on the contractor's part, then the Contractor will be required to pay for the services of re-testing as well as any inspection time associated with this re-testing. In the event that re-testing is necessary, the Owner will pay the cost of re-testing and additional inspection to the laboratory and will direct the Engineer/Architect to deduct this amount from the Contractor's next partial payment application.

ARTICLE 12 - PATENTS AND TAXES

The Contractor shall defend, indemnify, and save and hold the Owner and its officers, directors, agents, servants, employees, representatives, and elected and appointed officials harmless from any and all liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the contract, including its use by the Owner, unless otherwise specifically stipulated in the contract documents.

License and/or royalty fees for the use of a process which are authorized by the Owner of the project must be reasonable and paid to the holder of the patent, or his authorized licensee, directly by the Contractor.

If the Contractor uses any design, device or materials covered by letter, patent or copyright, he shall provide for such use by suitable agreement with the owner of such patented or copyrighted design, device or material. It is mutually agreed and understood, that, without exception, the contract prices shall include all royalties or costs arising from the use of such design, device or materials, in any way involved in the work. The Contractor and/or his Sureties shall defend, indemnify, and hold harmless the Owner of the project from any and all claims of infringement by reason of the use of patented or copyrighted design, device or materials, or any trademark or copyright in connection with the work agreed to be performed under this contract, and shall defend, indemnify, and hold harmless the Owner from the cost, expense or damage which it may be obligated to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.

The Contractor shall pay all federal, state and local taxes due or payable during the time of the Contract on materials, equipment, or labor to the proper authorities prior to the final acceptance of work. This amount shall be included in the bid price.

ARTICLE 13 - SURVEYS, PERMITS, RIGHTS-OF-WAY, EASEMENTS AND REGULATIONS

Unless otherwise provided for in the specifications, the Owner shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the work together with a suitable number of elevation bench marks adjacent to the work as shown in the Contract Documents. The Contractor shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets. The Contractor will be responsible for maintaining their accuracy thereafter and will be responsible for all expenses resulting from their disturbance. The Contractor shall notify the Engineer/Architect in writing at least forty-eight (48) hours in advance of the time the Contractor contemplates commencing work on any parts of the work requiring surveys to be provided by the Owner.

The Owner will provide rights-of-way for the purpose of construction without cost to the Contractor by securing permits in areas of public dedication or by obtaining easements across privately owned property. It shall be the responsibility of the Contractor, prior to the initiation of construction on easements through private property, to inform the property owner of his intent to

begin construction. Before beginning construction in areas of public dedication, the Contractor shall inform the Owner seven (7) calendar days in advance thereof, and the agency having jurisdiction in the area forty-eight (48) hours prior to initiation of the work.

The Contractor shall be responsible for conducting all of his operations under the contract within the limits of the applicable easements and rights-of-way. The Contractor shall be responsible for all damages to which may occur as a result of conducting any operations outside of the boundaries of the applicable servitudes, easements, and/or rights-of-way along the project site. Should the Contractor require additional right-of-way for access or egress, he shall make arrangements with the owners of such property for such right-of-way at no cost to the Owner. Upon substantial completion of the work and prior to the Owner accepting the project, the Contractor shall provide the Owner a Letter or Release acquired from the property owner(s) in which work, access or egress was performed.

The Contractor shall procure and pay for any other permits, licenses and approvals necessary for the execution of his contract.

The Contractor shall review and be fully familiar with all terms conditions, and limitations contained in all servitudes, easements, and/or right-of-way agreements executed by all landowners along the site of the project, and shall be fully bound by all provisions contained therein. Such servitudes, easements, and right-of-way agreements shall be deemed to be a part of this contract, and any violation by the Contractor of the terms, conditions, and limitations contained therein shall be deemed to be a breach of the contract.

The Contractor shall fully defend, indemnify, and hold forever harmless the Owner, it's officers, directors, agents, servants, employees, representatives, and elected and appointed officials harmless from any and all liability of any nature or kind whatsoever, resulting and/or to result from any operations conducted by Contractor, its employees, agents, and/or representatives outside of the boundaries of any easement or right-of-way and/or any breach or violation of the terms, conditions, and/or limitations of any servitude, easement, and/or right-of-way agreement affecting property situated along the site of the project.

The Contractor shall comply with all laws, ordinances, rules, orders, and regulations relating to the performance of the work, the protection of adjacent property, and the maintenance of passageways, guard fences or other protective facilities. Contractor shall also construct temporary fences as needed to confine livestock to their respective pastures.

ARTICLE 14 - PLANS AND WORKING DRAWINGS

When applicable, the Owner will furnish the Contractor without charge five (5) sets of plans and three (3) sets of specifications and upon written request by the Contractor additional sets of plans and specifications will be supplied for the cost of printing.

If, in the course of the work, the Contractor finds any discrepancy between the drawings and the physical conditions of the locality or any errors or omissions in the drawing or in the layout as given by points and instructions, it shall be his duty immediately to inform the Engineer/Architect in writing; and the Engineer/Architect, in writing, promptly shall verify such

discrepancy and authorize the Contractor to make corrections, if necessary. Until so authorized, any work done after such discovery will be done at the Contractor's risk.

ARTICLE 15 - CONTRACTOR'S OBLIGATION

The Contractor agrees to do, perform and complete all work and furnish all supplies and materials, machinery, equipment, facilities and means, except as herein otherwise expressly specified, necessary or proper to perform and complete all work required by this contract in a good workmanlike manner, within the time herein specified, in accordance with the plans and specifications covered by this contract and any and all supplemental plans and specifications, and in accordance with the directions of the Engineer/Architect as given from time to time during the progress of the work.

In the event of temporary suspensions of work, during inclement weather, or whenever the Engineer/Architect shall direct, the Contractor and his subcontractors shall take all necessary steps to carefully protect the project, work, and materials against damage or injury.

At all times prior to substantial completion of the project by the Owner, the Contractor shall be fully responsible for the condition and care of the project and shall take all reasonable steps to protect the project from injury, damage, or loss to any part thereof resulting from weather, the action of the elements, or from any other cause, whether arising from the execution or from the non-execution of the work. Prior to substantial completion of the project, the Contractor shall be liable and responsible to rebuild, repair, and/or restore all portions of the project which may sustain injury, damage, or loss, or which contain defects or deficiencies, and shall bear all expense associated therewith. The Contractor shall also be liable and answerable for all costs and expenses associated with repair and/or restoration of all work performed by other contractors which is destroyed or damaged as a result of the aforesaid corrective work.

ARTICLE 16 - PROTECTION OF WORK, PROPERTY AND LIVES

The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this contract. He shall at all times safely guard and protect his own work, and that of adjacent property from damage. The Contractor shall repair and/or replace any such damage, loss or injury.

The Contractor shall be responsible for the safety, efficiency, and adequacy of his plant, appliances, and methods, and for any damage which may result from their failure or their improper construction, maintenance or operations.

The Contractor and all subcontractors shall be required to comply with all the applicable local, state and federal safety and health standards.

The Contractor is hereby further notified that for reasonable cause of suspicion, he or his employee(s) are subject to drug testing while engaged in business on Lafayette Consolidated Government property as per Lafayette Consolidated Government Comprehensive Substance Abuse Policy and Procedure Memorandum 123-1, Article 4.2, which is incorporated herein by reference

ARTICLE 17 - SUPERVISION BY CONTRACTOR

The Contractor shall be responsible for supervision of all employees and personnel required for the project. The Contractor shall employ a construction superintendent or foreman at the work site who shall have full authority to act for the Contractor. Such representative shall be acceptable to the Engineer/Architect. Contractor shall also furnish to the Engineer/Architect and Owner, a list of all emergency personnel for after normal hour contact with their after hour telephone numbers, pager numbers, etc.

ARTICLE 18 - INCREASED OR DECREASED QUANTITIES OF WORK

The Owner may, without notice to the sureties on the Contractor's bond and without invalidating the contract, by written instructions, order extra work or make changes by altering the details of construction, add to or deduct from the work, with the contract's sum being adjusted. All such work shall be executed under the conditions of the original Contract, supplemented by written change order agreements recommended by the Engineer/Architect. Any claim for extensions of time caused thereby shall be adjusted at the time of ordering such change.

In giving instructions, the Engineer/Architect shall have authority to make minor changes in the work, provided the Owner has approved such changes and funding for those changes are available at that time and that the proposed changes are within the scope of the project. Except in an emergency endangering life or property, no extra work or change shall be made without consent of the Owner, and a written order by the Engineer/Architect shall be forthcoming immediately after the work is completed. No claim for any addition to the contract sum or contract time shall be valid unless so ordered, and in accordance with the terms of a properly executed change order or extra work order.

ARTICLE 19 - CHANGE ORDERS, PAYMENT FOR EXTRA OR DELETED WORK

Change orders may be entered into by the Owner and Contractor as may be deemed necessary in accordance with the laws of the State of Louisiana and Lafayette City-Parish Consolidated Government procedures and policy.

The Owner, without invalidating the contract may, by written instructions, order extra work or make changes by altering the details of construction, add to or deduct from the work, with the contract's sum being adjusted accordingly. All such work shall be executed under the conditions of the original Contract, supplemented by written change order or extra work order agreements recommended by the Engineer/Architect and negotiated by the contracted parties, except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.

The value of any such extra work or change shall be determined in one or more of the following ways and in the following priority:

- a) By unit prices named in the Contract or subsequently agreed upon. Unit Prices shall include cost of labor, materials, equipment, overhead and profit.

- b) By a lump sum. Unit Prices shall include cost of labor, materials, equipment, overhead and profit.
- c) By otherwise agreed upon basis. Unit Prices shall include cost of labor, materials, equipment, overhead and profit.

If none of the above methods is agreed upon, the Contractor, provided he is so ordered by the Owner in writing, shall proceed with the work. In such case he shall keep and preserve in such form as the Engineer/Architect may direct, a correct itemized account of the net cost of labor and materials, together with vouchers bearing written certification by the Contractor. In any case, the Engineer/Architect shall certify to the amount, including an allowance of fifteen percent (15%) on the Cost of Work for overhead and profit due to the General Contractor. Where such change involves a subcontractor, an allowance of fifteen percent (15%) on the Cost of Work for overhead and profit shall be due the sub-contractor and an allowance of ten percent (10%) on the Cost of Work not including the Subcontractor's overhead and profit shall be due the General Contractor. In no event shall total mark-up exceed twenty five percent (25) on the Cost of Work. Pending final determination of value, payments on account of changes shall be made on the Engineer's/Architect's estimate.

Once a change order has been agreed upon, there will be no future requests for either additional costs or extensions of time related to that Change Order.

ARTICLE 20 - CLAIMS FOR EXTRA COST

If the Contractor claims that any instructions by drawings, or otherwise, involve extra cost under this contract, he shall give the Engineer/Architect written notice thereof within fourteen (14) calendar days after the receipt of such instructions and, in any event, before commencing the procedure. The Engineer/Architect and/or Owner shall recommend whether the Contractor is entitled to be compensated for such extra cost and shall make any required adjustments in accordance with Article 18 of these general terms and conditions. If no written claim is made within this fourteen (14) calendar-day period, the Contractor will be deemed to have waived any claim for extra cost for such work. If in the opinion of the Owner, the Engineer/Architect's judgment is in error or inappropriate, the Owner may review and form its own judgment. In this event the Owner will notify the Engineer/Architect of the Owner's judgment for the Engineer/Architect to issue clear direction to the Contractor on how to proceed.

ARTICLE 21 - CORRECTION OF WORK

The Engineer/Architect shall be the judge of the quality and suitability of all work, materials, and processes of manufacture provided by the Contractor. Should any of the work, materials, and processes of manufacture fail to meet the Engineer's/Architect's approval, they shall be forthwith reconstructed, replaced and/or corrected, as the case may be, by the Contractor at his own expense. Rejected materials shall immediately be removed from the site. If, in the opinion of the Engineer/Architect, it is undesirable to replace any defective or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the Contract Documents, the compensation to be paid to the Contractor hereunder shall be reduced by such amount as in the judgment of the Engineer/Architect shall be equitable. If in the opinion

of the Owner, the Engineer/Architect's judgment is in error or inappropriate, the Owner may review and form its own judgment. In this event the Owner will notify the Engineer/Architect of the Owner's judgment for the Engineer/Architect to issue clear direction to the Contractor on how to proceed.

ARTICLE 22 – OWNER'S RIGHT TO DO WORK

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the Owner after seven (7) calendar days written notice to the Contractor, may correct such deficiencies itself or by use of other contractors without prejudice to any other remedy it may have, and may deduct the cost thereof from the payment then or thereafter due to the Contractor.

ARTICLE 23 - OWNER'S RIGHT TO TERMINATE CONTRACT FOR CAUSE OR CONVENIENCE

A. TERMINATION FOR CAUSE

The Owner shall have the right to terminate the employment of the Contractor, without prejudice to any other rights or remedies that may be available to the Owner, in the event that the Contractor:

- a) Is adjudged bankrupt, makes a general assignment for the benefit of his creditors, or a receiver is appointed on account of the Contractor's insolvency;
- b) Fails to supply enough skilled workmen, properly operating equipment, or proper materials to perform the work required under the contract in a timely and proper fashion and to assure prompt completion of the work;
- c) Fails to make prompt payment to subcontractors, or payments for materials or labor;
- d) Persistently disregards law, ordinances or the instructions of the Engineer/Architect, or otherwise violates any provision of the contract or contract documents;
- e) Performs the work unsuitably or neglects or refuses to remove rejected materials or correct work that has been rejected by the Engineer/Architect after being provided written notice and opportunity to cure within a reasonable period of time;
- f) Discontinues prosecution of the work;
- g) Fails to resume work which has been discontinued within a reasonable time after being furnished notification to do so;
- h) Fails to complete the project within the contract time, or any extension of the contract time or accepted substantial completion date established within an approved revised construction schedule;
- i) Fails to perform or carry on the work in an acceptable manner within a reasonable time

after being furnished written notification to do so;

- j) Fails to secure, replace, and/or maintain the insurance required under Article 32.

Then upon written notification by the Engineer/Architect to the Owner that sufficient cause exists to justify such action, the Owner, without prejudice to any other right or remedy, may terminate the employment of the Contractor. The Owner shall give the Contractor seven (7) calendar days written notice of its intent to terminate the Contractor's employment for one or more of the causes stated herein above. In the event of any such termination, the Owner will serve written notice thereof upon the surety and the Contractor, and the surety shall have the right to take over and perform the contract; provided however, that if the surety does not perform the contract or does not commence performance thereof within thirty (30) calendar days from the date of the service of such notice, the Owner may take possession of the premises and of all materials, tools, and appliances thereon and finish the work by whatever method it may deem expedient.

In the event that the Contractor's employment is terminated as aforesaid, he shall not be entitled to receive any further payment under the contract until all incomplete work has been satisfactorily completed and all deficient and/or defective work has been repaired and/or remedied. If following final acceptance of the project, the unpaid balance of funds remaining in the contract exceeds the cost and expense required to complete the project, including compensation for additional engineering, managerial, administrative services, and legal expenses, such excess shall be paid to the Contractor. However, if the cost and expense required to complete the project exceeds the unpaid balance of funds remaining in the contract, the Contractor shall forfeit the right to claim any additional payment under the contract.

The foregoing provisions are in addition to and not in limitation of any other right or remedies available to the Owner under the contract. Furthermore, nothing contained in this Article shall affect the right of the Owner to impose and collect liquidated damages from the Contractor and/or the Surety in accordance with the provisions of Article 5, *supra*.

B. TERMINATION FOR CONVENIENCE

Owner may, at any time, terminate this Agreement or any portion thereof, for Owner's convenience, upon providing written notice to Contractor. In such case, Contractor shall be paid for all work completed through the date notice was provided (less payments already received) and reasonable demobilization and restocking charges incurred and reasonable overhead and profit based upon industry standards on the work performed. In no event shall Contractor be entitled to payment of overhead and profit on work not performed. In the event it is determined that Contractor was wrongfully terminated for cause, pursuant to Article 23A, such termination shall be automatically converted to a termination for convenience under and payment made as provided under this Article.

ARTICLE 24 - CONTRACTOR'S RIGHT TO TERMINATE CONTRACT

If the work should be stopped by order of any court or other public authority for a period of three (3) months or more, through no act or fault of the Contractor or of anyone employed by him,

then the Contractor, upon ten (10) calendar days written notice to the Owner and the Engineer/Architect, may stop work or terminate the Contract and recover from the Owner payment for all work satisfactorily performed and materials delivered to the job site through the date of Notice of Termination.

ARTICLE 25 - TEMPORARY SUSPENSION OF WORK

The Owner shall have the authority to suspend the work wholly or in part as he may deem appropriate where the Contractor fails to perform the work in accordance with plans and specifications. In the event that the Owner suspends the work as a result of the failure of the Contractor to comply with plans and specifications, the Contractor shall not be entitled to assert claims for additional time and/or money to complete the project and shall remain liable for satisfactory completion of the contract within the contract time. An order to suspend the work for periods exceeding one calendar day shall be in writing and shall include specific reason for the suspension.

ARTICLE 26 - USE OF COMPLETED PORTIONS

The Owner shall have the right to take possession of and use any completed or partially completed portions of the work provided such occupancy or use does not substantially impede the Contractor's progress. Such taking possession and use shall not be deemed an acceptance of any work not completed or partially completed in accordance with the Contract Documents.

The Owner shall be responsible for any damages incurred as a direct result of his use of the portion of the work except when such damages occur as a result of incomplete work or faulty workmanship or materials.

ARTICLE 27 - ELECTRICAL TRANSMISSION, TELEPHONE AND CABLE TELEVISION FACILITIES

The Contractor shall make all necessary or required provisions and shall perform all work required by his operations under the contract and incident to any interference with electrical transmission, telephone and cable television facilities, with their operations, or with the maintenance of traffic or service thereon, all in a manner satisfactory to the Owner or operations thereof and to the Engineer/Architect.

The cost of providing and maintaining all necessary or required watchmen, signals, guards, temporary structures and other facilities, of making necessary repairs, replacements, or similar operations, if required, shall be paid for by the Contractor.

ARTICLE 28 - UNDERGROUND UTILITIES

It shall be the responsibility of the Contractor to exercise due and reasonable care in locating the existing underground utilities as accurately as possible, ahead of the actual construction work. Prior to commencement of work, Contractor shall contact Louisiana One Call to have any utility located in his area(s) of work notified of the work that will be performed by the Contractor.

In the event that construction operations are to be done in the vicinity of the underground utility

lines as shown on the drawings, the Contractor shall immediately notify the Engineer/Architect and a representative of the respective companies, prior to doing any work in the area. This notification shall be given far enough in advance of proposed construction to avoid any delay in operations.

The Contractor shall be fully responsible for repairing or having repaired any and all damages to underground utilities, lines, fixtures, equipment, etc. that may result from his construction operations at no cost to the Owner. Contractor shall further defend, indemnify, and hold forever harmless the Owner, its employees, agents, representatives, directors, officers, elected and appointed officials, and/or from any and all claims which may be asserted by any persons or parties whomsoever for damages to underground utilities, lines, fixtures, equipment, etc. related to and/or resulting from any work performed by Contractor under the contract, including all claims, demands, causes of action and/or rights of action which may be asserted as a result of the sole negligence, liability, and/or fault of the Contractor, his employees, agents, and representatives, and/or the joint and/or concurrent negligence, liability, and/or fault of the Contractor with any other persons or parties whomsoever whether said lines are indicated on the drawings or not.

ARTICLE 29 - WARRANTY AND GUARANTEE

Contractor warrants that all materials provided pursuant to this Contract shall be new unless otherwise indicated and all work shall be performed in a good and workmanlike manner.

All work herein specified and/or as indicated on the plans shall be warranted and guaranteed against defects in construction, including faulty workmanship and defective materials, for a period of not less than one (1) calendar year from the date of recordation of final acceptance of the work or for such longer periods as may be set forth in the specifications. The Contractor shall, within a reasonable time after receipt of written notice thereof, repair and/or replace any damaged or failed portions of the work which may develop during said one year period, and damage to other work caused by such damages or failures, at his own expense and without cost to the Owner.

Neither the final certificate of payment nor any provisions in the Contract Documents nor partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship.

Nothing contained in this Article shall be deemed to limit the liability or responsibility of the Contractor for damages resulting from poor workmanship, including defective materials.

ARTICLE 30 - PAYMENT

The Owner hereby agrees to pay to the Contractor as full compensation for all work performed under the contract, and/or supplemental agreements thereto, the monetary value of the actual quantities in the completed work according to the schedule of unit prices and/or lump sum prices set forth in attached proposal and/or duly authorized supplements thereto, and made a part of the

contract.

Partial payments under the Contract shall be made at the request of the Contractor not more than once each month, based upon partial estimates agreed to by the Contractor and Engineer/Architect and shall be furnished to the Engineer/Architect and approved by the Engineer/Architect prior to transmittal to the Owner for approval and payment.

The partial estimates will be approximately stated, and all partial estimates and payments shall be subject to corrections in the estimate rendered following the discovery of any error in any previous estimates.

The payment of the partial estimate shall not be taken as verification that the work has been performed and that its quality is satisfactory and it will in no way serve as a release to the Contractor for the responsibility of any portions thereof. The work and any particulars relating thereto shall be subject to revision and adjustment by the Engineer/Architect and/or the Owner at any time prior to final payment, regardless of any previous action taken.

There shall be reserved from the payments provided for the Contract ten percent (10%) for contracts less than \$500,000 or five percent (5%) for contracts of \$500,000 or more, of the estimates submitted, said sum to constitute a trust fund for the protection of and payment to any person or persons, mechanic, subcontractor or materialmen who shall perform any labor upon such contract, or the doing of said work, and all persons who shall supply such person or persons or subcontractors with provisions and supplies for the carrying on of such work, and shall be withheld for a minimum of forty-five (45) calendar days after substantial acceptance of the completed contract.

After the expiration of the forty-five (45) calendar day period, the reserve in excess of a sum sufficient to discharge the claims of materialmen and laborers who have filed their claims, together with a sum sufficient to defray the cost of such action and to pay attorneys' fees, shall be paid to the Contractor.

The Contractor shall be responsible for obtaining and furnishing a clear lien and privilege certificate to the Owner at the expiration of the retainage period, and prior to payment of any reserve withheld.

ARTICLE 31 - PAYMENTS WITHHELD

In addition to the percentage provided for in Article 30 of these General Conditions, the Owner may withhold such amounts from any payment as may be necessary to protect himself from loss on account of:

- a) Defective work not remedied;
- b) Claims filed or reasonable evidence indicating probable filing of claims;
- c) Failure of the Contractor to make payments properly to subcontractors or for material or labor;

- d) Reasonable evidence that the Work will not be completed within the Contract time and that the unpaid balance would not be adequate to cover damages for the anticipated delay;
- e) A reasonable doubt that the contract can be completed within the time period remaining under the contract;
- f) Damage to another contractor;
- g) Failure to submit required reports; or
- h) Modifications of the contract which necessitate the execution of change orders prior to payment of funds.

Furthermore, nothing contained in this Article shall be deemed to limit the right of the Owner to withhold liquidated damages as permitted under Article 5 from any amounts which may be due and owing the Contractor for work performed under the contract.

ARTICLE 32 - CONTRACTOR'S INSURANCE AND SUBCONTRACTOR'S INSURANCE

The attached certificate of insurance correlates directly with the minimum insurance requirements of the Contract. The Owner requires that the certificate of insurance be provided on a form acceptable to the Owner. This certificate of insurance shall be furnished to the Owner within ten (10) calendar days of notice of award.

The Contractor and any Subcontractors performing Work under the Contract shall be required to carry insurance as required herein.

The Contractor shall not commence work under the contract until he has obtained all insurance required by this paragraph, and until such insurance has been approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on his subcontract until the insurance required has been obtained and submitted. Proper certificates evidencing such insurance shall be furnished to the Owner prior to commencement of work. All policies of insurance must contain provisions indicating that no cancellation or change in such insurance shall be effected for any cause without thirty (30) calendar days written notice being first given to the Owner.

The insurance company providing coverage must be acceptable to the Owner.

If at any time, any of the insurance policies required to be furnished by the Contractor (and Subcontractors) under the terms of this Article shall lapse, expire, or fail to comply with the requirements of this Article, the Contractor (or Subcontractor) shall procure and obtain such new insurance policies as may be required in order to comply with the requirements of this Article. Upon obtaining a new insurance policy, the Contractor (or the Subcontractor) insurance carrier/broker shall submit a new certificate of insurance to the Owner for approval. Upon failure of the Contractor (or the Subcontractor) to furnish, deliver and maintain such insurance as required by this Article, the Contract, at the election of the Owner, may be declared suspended, discontinued or terminated. Failure of the Contractor (or the Subcontractor) to maintain any

required insurance shall not relieve the Contractor from any liability under the Contract, nor shall the insurance requirements contained in this Article be construed to conflict with the obligations of the Contractor regarding indemnification as set forth in Article 52.

The requirements contained in this Article shall not be construed and are not intended to limit the Contractor's obligations to indemnify and defend the Owner as contained in Article 52, but merely constitute minimum insurance requirements which must be provided to secure such obligations.

The Contractor (and Subcontractors) shall effect and maintain until final acceptance of the Work, insurance as follows:

I. Standard Worker's Compensation Insurance - Coverage for all Worker's Compensation claims as permitted under Louisiana State Law together with Employer's Liability Coverage of \$1 million minimum, per occurrence.

II. Commercial General Liability Insurance - Coverage under this policy must be provided on an "occurrence" basis, and not on a "claims made" basis. **THE LAFAYETTE CITY-PARISH CONSOLIDATED GOVERNMENT, ITS OFFICIALS AND EMPLOYEES MUST BE NAMED AS AN ADDITIONAL INSURED ON THE POLICY.** All commercial general liability insurance shall, at a minimum, include coverage for the following:

A. Premises Operations	\$1 million per occurrence
B. Independent Contractors	\$1 million per occurrence
C. Products - Completed Operations	\$1 million per occurrence
D. Contractual Liability	\$1 million per occurrence
E. Broad Form Property Damage	\$1 million per occurrence

Additionally, where required by the Owner, the policy required by this Subsection shall also include Explosion, Collapse and Underground Hazard.

III. Business Automobile Liability Policy – Coverage under this policy shall include Business Automobile Liability Insurance with limits of at least \$1,000,000.00 Combined Single Limit (CSL) for bodily injury and property damage per accident. If "Any Auto" coverage is carried, coverage for "Owned Auto," "Non-Owned Auto" and "Hired Auto" will not be required. If Contractor (or Subcontractor) does not own an automobile (vehicle) and an automobile (vehicle) is utilized in the execution of the Contract, then "Hired" and "Non-Owned Auto" coverage is required.

IV. Umbrella Liability

In lieu of providing insurance at the limits required in Sections I, II and III of this Article, Contractors may fulfill the requirements of this Article by securing umbrella liability insurance coverage provided that the combined total of the primary and umbrella coverages satisfy the minimum required insurance limits set forth in Subsections I, II and III hereinabove.

V. Lafayette City-Parish Consolidated Government as an Additional Insured

The Lafayette City-Parish Consolidated Government, its officials and employees must be named on all liability policies described above as additional insureds.

VI. Primary Coverage

Coverage afforded the Lafayette City-Parish Consolidated Government, its officials, and employees as an insured applies as primary and not excess or contributing to any other insurance issued in the name of the Lafayette City-Parish Consolidated Government.

VII. Waiver of Subrogation

Contractors (and Subcontractors) must obtain a Waiver of Subrogation from all insurance carriers providing coverage under Section I in this Article for any and all claims which could be asserted against the Owner, its employees, agents, representatives, officers, directors, elected and appointed officials.

VIII. Waiver of Insurance Requirements

Notwithstanding anything to the contrary contained herein, the Owner reserves the right at all times, in its discretion, to alter, amend, and/or waive insurance requirements set forth in this Article. Such alteration, amendment or waiver must be in writing to be valid.

ARTICLE 33 - BUILDERS RISK INSURANCE

The Contractor shall effect and maintain until substantial completion of the work, insurance for Builders Risk for projects involving building construction.

The Owner assumes no risk for loss by fire or other casualty to any portion of the construction project or equipment thereof, whether completed, in process of construction or installation, or stored on the premises, during the life of any contract for any portion of the construction except that the Contractor shall not be responsible for loss by fire or other casualty to such portions of the work which the Owner is using as set forth in Article 26 of these General Conditions, except that the Contractor shall assume all loss to said properties being used by the Owner if the damage occurs as a result of negligence on the part of the Contractor or as a result of work not completed by the Contractor.

When required by the Owner, the Contractor shall maintain during the life of the Contract insurance acceptable to the Owner against all risks, which shall include flood insurance if the project is located within a flood prone area. This insurance shall be an amount equal to the amount of the Contract with no greater than \$1,000 deductible on contracts up to \$300,000 and thereafter as required by the Owner. Such policy shall include the Owner as a named insured and shall be furnished to the Owner through its Risk Management Division prior to execution of the contract. Contractor shall be responsible for any and all deductibles.

The making of partial payments to the Contractor shall not be construed as creation of an insurable interest by or for the Owner or as relieving the various contractors or their sureties of

responsibility from loss from all risks (fire, windstorm, explosion, vandalism, flood, etc.) occurring prior to substantial completion of the project.

ARTICLE 34 - PAYMENT AND PERFORMANCE BOND

Prior to the signing of the contract and within ten (10) calendar days after the Contractor is notified that he is the successful bidder, unless an extension of time is granted by Owner, the Contractor will furnish good and solvent bond(s) issued by surety(s) deemed satisfactory to the Owner and in such form as shall be deemed acceptable to the Owner, for the faithful performance of his duties and for the payment by the Contractor of all obligations arising from the work contemplated under the contract. The bond(s) shall be in an amount equal to 100% of the total contract price, plus any change orders. The bond(s) shall provide that the surety waives the requirement of notice of any change in the work necessary or desirable to fully complete the work as contemplated.

The bond(s) shall be executed by the Contractor with a surety, or insurance company, which is currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register, or by a Louisiana Domiciled Insurance company with at least at A- rating in the latest printing of the A.M. Best's Key Rating Guide to write individual bonds up to ten percent of policyholders' surplus as shown in the A.M. Best's Key Rating Guide, or by an insurance company that is either domiciled in Louisiana or owned by Louisiana residents and is licensed to write surety bonds. The bond(s) shall be written by a company licensed to do business in the State of Louisiana and who is contracted with the surety company or bond issuer as an agent of the company or issuer. Should the surety company become bankrupt or be removed from the State, the Contractor shall furnish a new bond without cost to the Owner.

The bond(s) provided by the Surety as required by this Article shall specifically stipulate that the Surety shall be bound and obligated by all terms and conditions contained in the contract and that in the event of a conflict between the terms, conditions, and limitations of the bond and those of the contract, that the terms of the contract shall be deemed to govern.

Said bond(s) shall be conditioned such that the Contractor will be bound to faithfully perform all the provisions of the Contract and will perform all work required under the contract, including labor and materials, in a good and workmanlike manner free of defects, within the contract time, and that the Contractor shall make payment of all obligations within the time specified to the satisfaction of the Owner and pay all laborers, mechanics, materialmen, and subcontractors, and all persons who supply such persons with provisions and supplies for the carrying on of such work, and that if the Contractor fails to comply with any of the aforesaid requirements, that the surety under the bond may be held liable and responsible for completion of any incomplete work contemplated under the contract and/or the repair of any deficient and/or defective work performed by the Contractor.

In the event that it should become necessary for the Owner to call upon and require the Surety to complete the work under the contract and/or to repair any deficient and/or defective work performed by the Contractor, the surety shall be entitled to be paid compensation for the work actually performed and satisfactorily completed by it solely in accordance with the payment

provisions contained in the contract, and shall not be entitled to recovery of compensation from the Owner for any amounts for which the Contractor has been previously paid for work performed under the contract. The Surety shall not be entitled to be paid by the Owner for any costs incurred by Surety as a result of the repair of any defective and/or deficient work performed by the Contractor. Furthermore, in the event that it becomes necessary for the Owner to impose liquidated damages in accordance with the provisions of Article 5 hereinabove thereby reducing the balance of funds payable by the Owner under the contract, such shall in no way limit and/or reduce the liability of the Surety to perform and complete the remaining work contemplated under the contract in a satisfactory manner, and the Surety shall be bound and obligated to complete the same regardless of whether there are sufficient funds remaining in the balance of funds under the contract to pay the Surety for such work.

The surety company furnishing said bond(s) must have an agent or representative with a permanent office in the State of Louisiana, upon whom notices referred to in the Contract Documents may be served. Service of said notice to said agent or representative in the State of Louisiana shall be equal to service of notice to the president of the surety company or such other officer as may be concerned.

IT IS REQUIRED THAT THE SIGNATORIES SHOW INFORMATION ON BONDS AND POWER OF ATTORNEY AS INDICATED BELOW:

AGENT: TYPE NAME, LICENSE NUMBER, ADDRESS, AND TELEPHONE NUMBER BELOW SIGNATURE

POWER OF ATTORNEY: TYPE NAME, ADDRESS, AND TELEPHONE NUMBER BELOW SIGNATURE

Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

ARTICLE 35 - ASSIGNMENT

Neither party to the contract shall assign the contract or sublet it as a whole without written consent of the other, nor shall the Contractor assign any moneys due or coming due to him hereunder without the previous written consent of the Owner.

No assignment of this contract shall be valid unless it shall contain a provision that the funds to be paid to the assignee under the assignment are subject to a prior lien for services rendered or materials supplied for performance of the work called for under the contract in favor of all persons, firms or corporations rendering such services or supplying such materials.

ARTICLE 36 - LIENS

Neither the final payment nor any part of the retained percentage shall come due until the Contractor shall deliver to the Owner a complete release of all liens arising out of this contract, or receipts in full in lieu thereof, and, if required by the Owner, an affidavit that so far as he has knowledge or information, the releases and receipts include all labor and material for which a lien could be filed; but if any subcontractor refuses to furnish a release or receipt in full, the

Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against any lien, construction cost, or attorney's fees.

ARTICLE 37 - SEPARATE CONTRACTS

The Owner reserves the right to contract for and perform additional work on or near the work to be performed by the Contractor under the contract. When separate contracts are let within the limits of one project, each contractor shall conduct his work so as not to hinder the progress of the work being performed by other contractors and shall cooperate with such other contractors and the Owner. The Contractor shall arrange his work and shall place and dispose of materials being used so as not to interfere with the operations of other contractors within the limits of the project.

The Contractor shall fully cooperate with other contractors in the arrangement for the materials and in the detailed execution of the work. The Contractor, including his Subcontractors, shall keep the Engineer/Architect fully informed of the progress and the detail work of other contractors and shall notify the Engineer/Architect immediately of lack of progress or defective workmanship on the part of other contractors. Failure of the Contractor to keep the Engineer/Architect fully informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by others within a reasonable time shall be construed as acceptance by the Contractor of the status of the work as being satisfactory for proper coordination with his own work.

ARTICLE 38 - SUBCONTRACTS

The Contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors.

The Contractor shall be solely responsible for the selection and performance of all subcontractors. The Contractor shall not be entitled to claims for additional time and/or increase in the Contract sum due to problems with performance of a subcontractor. In the event that the Owner has a reasonable objection to a subcontractor selected by Contractor, Owner shall notify Contractor of such objection in writing. The objection must be based upon a legal ground, such as, but not limited to, a subcontractor that has been debarred from performing work by Owner pursuant to Lafayette Consolidated Government procedures for debarment determination. Such subcontractor shall be replaced by the Contractor at the Contractor's expense.

The relationship between the Contractor and his subcontractors shall at all times be deemed to be a master-servant relationship, and the Contractor shall be fully liable and responsible to the Owner for all acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, to the same degree and extent as he is liable and responsible for the acts and omissions of his own employees and other persons directly employed by him.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and other contract documents, plans, and specifications insofar as applicable to the work of subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner

may exercise over the Contractor under any provision of the Contract Documents.

Nothing contained in this contract shall create any contractual relationship between any subcontractor and the Owner or Architect/Engineer. No subcontract will in any case relieve the Contractor of his responsibility under the contract and bond.

ARTICLE 39 - ENGINEER'S/ARCHITECT'S AUTHORITY

The Engineer/Architect shall give all orders and directions contemplated under this contract and specifications relative to the execution of the work. The Engineer/Architect shall determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under this contract and shall decide all questions which may arise in relation to said work and the construction thereof. The Engineer's/Architect's estimates and decisions shall be final and conclusive except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said contract or specifications, the determination or decision of the Engineer/Architect shall be a condition precedent to the right of the Contractor to receive any money or payment for the work under this contract offered in any manner or to any extent by such question. If in the opinion of the Owner, the Engineer/Architect's estimates and decisions are in error or inappropriate, the Owner may review and form its own estimates and decisions. In this event the Owner will notify the Engineer/Architect of the Owner's estimates and decisions for the Engineer/Architect to issue clear direction to the Contractor on how to proceed.

The Engineer/Architect shall decide the meaning and intent of any portion of the specifications and of any plans or drawings where the same may be found obscure or to be in dispute. Any differences or conflicts in regard to their work which may arise between the Contractor under this contract and other contractors performing work for the Owner shall be adjusted and determined by the Engineer/Architect. If in the opinion of the Owner, the Engineer/Architect's decisions are in error or inappropriate, the Owner may review and form its own decisions. In this event the Owner will notify the Engineer/Architect of the Owner's decisions for the Engineer/Architect to issue clear direction to the Contractor on how to proceed.

ARTICLE 40 - INSPECTION

The Engineer/Architect and his representative shall have free access at all times to all parts of the work, and to all materials intended for use in the work. The Contractor shall furnish the Engineer/Architect with every reasonable facility for ascertaining whether or not the work as performed is in accordance with the requirements and intent of the specifications and the contract. The work will be inspected as it progresses, but failure to reject or condemn defective work or materials at the time it is done will in no way prevent its rejection whenever it is discovered. If work is covered prior to inspection and the Engineer/Architect requires it, the Contractor shall, at any time before the acceptance of the work, remove or uncover such portions of the finished work as may be directed. If the work is found to be satisfactory, Contractor shall be entitled to compensation for costs actually incurred in re-covering the work. If work uncovered is found to be unsatisfactory, Contractor shall be responsible for cost to correct and close such work.

ARTICLE 41 - AUTHORITY AND DUTIES OF INSPECTOR

The Inspector will be authorized to inspect all work done and materials furnished. Such inspection may extend to all or to any parts of the work and to the preparation or manufacture of the materials to be used.

He may be stationed at the work site to report to the Engineer/Architect as to the progress of the work and the manner in which it is being performed and to call attention whenever it appears that materials furnished or work performed fails to fulfill requirements of the specifications. The Inspector will have authority to reject materials or suspend work until the question at issue can be referred to and settled by the Engineer/Architect. The Inspector will not be authorized to revoke, alter, enlarge, or release any requirement of these specifications, nor to approve or accept any portion of the work, nor will he be authorized to issue instructions contrary to the plans and specifications. He will in no case act as foreman nor will he interfere with management of the work.

ARTICLE 42 - FINAL CLEANING UP

Prior to Notice of Acceptance and Substantial Completion, the Contractor shall clean and remove from the Owner's property all surplus or discarded materials, weeds, bushes, rubbish, temporary structures and equipment. He shall restore in an acceptable manner all property, both public and private, which has been damaged during the prosecution of the work, and shall leave the site of the work in a neat and presentable condition throughout.

ARTICLE 43 - REMOVAL OF EQUIPMENT

In the case of annulment of this contract before completion, from any cause whatever, the Contractor shall promptly remove any part or all of his equipment and supplies from the property of the owner, if notified to do so by the Owner, and in the event he fails to do so, the Owner shall have the right to remove such equipment and supplies at the expense of the Contractor. Such expense shall be deducted from any payment due the Contractor.

ARTICLE 44 – SUBSTANTIAL COMPLETION

Upon notice from the Contractor that it believes the project has reached substantial completion, and before final acceptance, the Engineer/Architect will make an inspection of the Work. Prior to the inspection by the Engineer/Architect, the Contractor shall, if applicable, notify the Engineer/Architect that the Project is ready for inspection by the State Fire Marshal's office or its representative. "Substantial Completion" is defined as the date on which the Work is complete in accordance with the Contract Documents in order that the Owner can occupy and use the project for its intended use. The date of Substantial Completion shall be specified in the Notice of Acceptance.

A prerequisite to the Work/project being accepted by the Owner as substantially complete is the Owner's receipt of the executed Roofing Contractor's and Roofing Manufacturer's guarantees, where roofing work is a part of the Contract or twenty-five (25) percent of the entire value of the roof being included within the "Punch List" as described in this Article. In such event, and only with respect to that portion of the Project for which Owner takes occupancy and has issued a

Notice of Acceptance identifying the date that the entirety of the Project, whichever is applicable, has reached Substantial Completion, the warranties shall begin to run on the entirety of the Project that has been accepted as substantially complete from the date of the acceptance of Substantial Completion as identified in the Notice of Acceptance.

If the Owner or its representative determines the Project is substantially complete, the Owner shall issue a Notice of Acceptance identifying the date the Project reached Substantial Completion and attach a punch list identifying the remaining items that must be completed before Final Acceptance and final payment. The Owner will then file an official Notice of Acceptance with the Office of the Clerk of Court and will forward one copy of the recorded acceptance to the Contractor and Engineer/Architect.

If the inspection discloses any work as being unsatisfactory or incomplete and such work generates a formal punch list, the Engineer/Architect will give the Contractor instructions for correction of same, and the Contractor shall immediately comply with such instructions. Upon satisfactory completion of the corrections, when a "Punch List" is generated, the Engineer/Architect shall prepare a "Recommendation of Acceptance" incorporating the punch list and submit to the Owner. Upon approval of the Recommendation of Acceptance, the Owner may issue a Notice of Acceptance of the Contract which shall establish the date of Substantial Completion.

Any punch list generated by the Engineer/Architect shall be accompanied by a cost estimate to correct the particular items of work the Engineer/Architect has developed. The cost estimate shall be developed based on mobilization, labor, material, and equipment costs of correcting each punch list item and shall be retained from monies owed to the Contractor, above and beyond the standard retainage. The cost of these items shall be prepared in the same format as the schedule of values. The Engineer/Architect shall retain his working papers used to determine the punch list items cost estimates should the matter be disputed later. The Owner shall not withhold from payment more than the value of the punch list. Punch list items completed shall be paid upon the expiration of the forty-five (45) day lien period. After that payment, none of the remaining funds shall be due the Contractor until all punch list items are completed and are accepted by the Engineer/Architect.

If the dollar value of the punch list exceeds the amount of funds, less retainage amount, in the remaining balance of the Contract, the Project shall not be accepted as Substantially Complete. If the funds remaining are less than required to complete the punch list work, the Contractor shall pay the difference. The provisions listed above shall not be subject to waiver.

Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work/project as provided in the Notice of Acceptance, unless otherwise agreed to in writing by the Owner and Contractor. Unless otherwise agreed in writing by the Owner and Contractor, security, maintenance, heat and utilities shall become the Owner's responsibility on the date of Substantial Completion. In the instance where the Owner has accepted the Work/project as substantially complete and issued a Notice of Acceptance, and the Contractor must remain on the premises to complete the "Punch List" or for whatever reason, the Contractor shall maintain Commercial General Liability insurance, Auto Liability insurance and Worker's Compensation insurance as set forth herein until the expiration of the forty-five (45)

day lien period or upon Final Acceptance of the work/project, whichever is later. Builder's Risk insurance may be cancelled only with the written permission of the Owner or the Owner's representative at Substantial Completion.

If the punch list is not completed within forty-five (45) days, through no fault of Owner or Engineer/Architect, the Owner may, but is not required, to place the Contractor in default. Thereafter, the Owner shall notify the Surety. If the Surety has not completed the punch list within forty-five days of receipt of notification, the Owner may, but is not required to, complete the remaining punch list items. Any costs incurred shall be paid for first out of any remaining Contract funds. If the costs incurred exceed the remaining Contract funds, the Contractor and its Surety shall be liable for such costs.

Upon completion of the punch list, Contractor shall request Final Inspection.

ARTICLE 45 – FINAL INSPECTION

Whenever the work provided for, or contemplated by the contract, shall have been satisfactorily completed and all punch list items completed, the Engineer/Architect shall be notified in writing that said work is completed and ready for final inspection. The Engineer/Architect shall, unless otherwise provided, make the final inspection within a reasonable length of time after the receipt of such notification.

If all construction provided for in the contract is found completed to his satisfaction, that inspection shall constitute the final inspection and the Engineer/Architect will make recommendation to the Owner for final acceptance and notify the Contractor in writing of this recommendation of acceptance.

ARTICLE 46 – WARRANTY WORK

The Contractor shall perform any warranty work which is required during a period of one (1) calendar year from the time of the recorded date of substantial completion of the work. Such warranty work shall include but is not limited to proper filling of settled trenches or earth fill and repairing of damage caused by such settlement, repairing cracks or other failures in streets, manholes or other structures, or other reasonable repairs. Written notice shall be given by the Owner or his representative when warranty work is deemed necessary. In the event that the repairs are not made within thirty (30) calendar days of date of the notice, the Owner may have the work performed by other parties and shall notify the Contractor's bonding company of such action to be taken. Costs arising from such repairs shall be paid by the Contractor and/or its Surety.

ARTICLE 47 - NOTICE AND SERVICE THEREOF

Any notice to any Contractor from the Owner relative to any part of this contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted, by certified or registered mail, to the said Contractor at his last given address, or delivered in person to the said Contractor or his authorized representative on the work.

ARTICLE 48 - PROHIBITED INTERESTS

No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept or approve, or take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this contract or in any part hereof. No officer, employee, architect, attorney, engineer, or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar function in connection with the construction of the project, shall become directly or indirectly interested personally in this Contract or in any part hereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the project.

ARTICLE 49 - PUBLIC CONVENIENCE AND SAFETY

The Contractor shall at all times use due diligence avoid causing unreasonable obstructions to traffic while performing the work contemplated under the contract. The convenience of the general public, the residents along and adjacent to the project, and the protection of persons and property are of prime importance and shall be adequately provided for by the Contractor. Fire hydrants on or adjacent to the project shall be kept accessible to the fire apparatus at all times and no material or obstructions shall be placed within 10 feet of any such hydrant. No section of a road shall be closed to the public except by express permission of the Engineer/Architect. During the progress of the work, the Contractor shall provide for local traffic to private property within the closed portion of the work.

ARTICLE 50 - COOPERATION WITH PUBLIC UTILITIES

It shall be the Contractor's responsibility to notify all the public utilities or other parties interested to make all necessary adjustments of public utility fixtures and appurtenances within or adjacent to the limits of construction. Unless otherwise specified, these adjustments are to be made by the owner of the utilities.

ARTICLE 51 - SANITARY ARRANGEMENTS

The Contractor shall make arrangements for the use of existing sanitary toilet facilities or shall construct, where permitted on the premises, approved temporary toilet conveniences, properly enclosed, for the use of all workmen employed on the project. He shall maintain the same in a sanitary condition from the beginning of the work until substantial completion, and shall then remove and disinfect the premises. All facilities shall be constructed and maintained in strict compliance with the local and state sanitary codes.

ARTICLE 52 - INDEMNIFICATION

In the contract to be awarded, the Contractor does and will agree to defend, indemnify, and hold forever harmless the Owner and their respective employees, agents, representatives, officers, directors, elected and appointed officials, and any and all other persons for whom they may be

deemed liable and/or answerable, to the extent permitted by law, from and against any and all claims, demands, causes of action, and/or rights of action arising out of or resulting from the performance of any of the work and/or obligations contemplated under the Contract, including, but not limited to, any and all claims for damages, losses, expenses and/or attorney's fees which result from any breach by the Contractor of any of the terms, provisions, conditions, and/or limitations of the contract, as well as any and all claims resulting from the sole negligence, liability, strict liability, and/or fault of the Contractor and/or the joint and/or concurrent negligence, liability, strict liability, and/or fault of the Contractor with any other persons or parties whomsoever.

The Contractor further agrees that he will defend, indemnify, and hold forever harmless the Owner, its employees, agents, representatives, officers, directors, elected and appointed officials, and any and all other persons or parties whomsoever, to the extent permitted by law, of and from any and all claims growing out of the lawful demands of subcontractors, laborers, workmen, mechanic, materialmen, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract. The Contractor shall at the Owner's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If the Contractor fails to do so, then the Owner may, after having served written notice on the Contractor, either pay unpaid bills, of which the Owner has written notice, direct, or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged.

Notwithstanding the aforesaid, nothing contained herein shall be deemed to limit the obligations of any insurance company providing coverage in accordance with the terms of this Contract to defend, indemnify, and hold harmless the Owner, its employees, agents, representatives, officers, directors, elected and appointed officials, and any and all other persons or parties whomsoever to the full extent of their insurance contract and/or as required by law.

ARTICLE 53 - EQUAL EMPLOYMENT OPPORTUNITY

- a) In connection with the execution of this contract, the Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Lafayette City-Parish Consolidated Government setting forth the provisions of this nondiscrimination clause.
- b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

- c) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- d) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided advising the labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- e) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the Contracting agency and Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.
- f) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further governmental contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or by order of the Secretary of Labor, or as otherwise provided by law.
- g) The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions for noncompliance.

Provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into such litigation to protect the interest of the United States.

ARTICLE 54 - BUDGETED FUNDS

Notwithstanding anything to the contrary in the contract, the parties agree that the maximum amount payable under the contract shall be that which is the amount budgeted by Owner for said Project. In the event the total amount of the contract is increased by reason of additional quantities or any other reason, so as to exceed the amount budgeted, the parties agree that Owner shall not be liable for the amount of such increase until and unless said budget is amended as provided for in the Owner's Home Rule Charter to allow for such increased amount. The Owner shall not authorize Change Orders, Payments for Extra or Deleted Work or Claims for Extra Costs as described in Articles 19 and 20 of these General Conditions without revising the

budgeted amount accordingly.

ARTICLE 55 – NON-APPROPRIATION OF FUNDS

Notwithstanding anything to the contrary in the contract, the effectiveness and validity of the contract is contingent upon the appropriation of funds to fulfill the requirements of the contract. If the Owner, after a diligent and good faith effort, fails to appropriate sufficient monies to provide for payments under the contract, the contract is void. Also, the continuation of this contract into a new fiscal year (i.e., 11/1-10/31) is contingent upon the appropriation of funds to fulfill the requirements of the contract for such fiscal year. If Owner, after a diligent and good faith effort, fails to appropriate sufficient monies to provide for payments under this contract, the obligation to make payment under this contract shall terminate on the last day of the fiscal year for which funds were appropriated.

Prior to the commencement of Work and thereafter at the written request of Contractor, Owner shall provide Contractor with evidence of Project financing. Evidence of such financing shall be a condition precedent to Contractor's commencing or continuing the Work. Contractor shall be notified to any material change in Project financing.

ARTICLE 56 - PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISES

The Lafayette Consolidated Government strongly encourages the participation of SEBs (Small Emerging Business Enterprise) in all contracts or procurements let by the Lafayette Consolidated Government for goods and services and labor and material. To that end, all contractors and suppliers are encouraged to utilize SEBs in the purchase or subcontracting of materials, supplies, services and labor and material in which disadvantaged businesses are available. Assistance in identifying said businesses may be obtained by calling (337) 291-8410.

ARTICLE 57 – STOCKPILED MATERIALS

With the prior consent of Owner, Contractor may purchase in advance materials to be used in the construction of the work and may stockpile same at a location agreed upon by Owner. However, notwithstanding prior payment for same, the risk of loss as a result of damage, theft, or otherwise to said stockpiled materials shall remain with Contractor and advance payment shall in no way relieve Contractor from its obligation to install said stockpiled materials as and when needed to complete the work. Owner shall require Contractor to execute an acknowledgement of Contractor's continuing risk of loss and shall additionally require consent to the payment from Contractor's bonding company.

Payment for material and equipment stored off the project site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such material and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance storage and transportation to the project site for such materials and equipment stored off the site.

ARTICLE 58 – HAZARDOUS MATERIALS

If the Contractor encounters asbestos, polychlorinated biphenyl (PCB) or any other hazardous

material or substance at the Project site, Contractor shall immediately cease work on the Project, or in the affected area, immediately notify the Owner in writing and await further direction by the Owner.

Upon receipt of notice of discovery of any hazardous materials or substances, Owner shall investigate and ensure that the hazardous materials or condition are remediated. Once the hazardous materials are remediated, Owner shall provide Contractor with written certification from independent testing laboratory that the hazardous conditions have been removed or rendered harmless.

Contractor shall be entitled to adjustment in the Contract time to the extent Contractor's time for completion has been materially impacted by the presence of hazardous materials or conditions, and such condition was not caused by Contractor. In the event the hazardous material caused the Contractor to incur additional expense, the Owner shall reimburse the Contractor under the Contract in accordance with the provisions of Articles 19 and 20 of these general Conditions.

Contractor shall be responsible for hazardous materials or substances brought to the site by Contractor and costs to remediate or remove such hazardous materials unless the hazardous materials or substances were required by the Contract Documents.

ARTICLE 59 – DISPUTE RESOLUTION

The parties shall use their best efforts to resolve all disputes in an amicable fashion. Prior to filing suit by either party with respect to any claims, or disputes arising between the parties, the disputes shall be submitted first to non-binding mediation. The mediation shall be conducted in accordance with the Construction Industry Mediation Rules of the American Arbitration Association. If the parties cannot agree to a private mediator, then the mediator shall be selected by the American Arbitration Association, upon the filing of a demand for mediation

If the dispute is not resolved by mediation within 60 days from the request for mediation, then either party may, but is not required to, institute legal proceedings. The parties agree that the 15th Judicial District in and for the Parish of Lafayette, State of Louisiana shall have the sole jurisdiction in any action brought under the contract, or related to this Project. Alternatively, by written agreement of Owner and Contractor, the parties may elect to have all disputes resolved by arbitration.

SECTION VII

SPECIAL CONDITIONS

ARTICLE 1 - INTENT

Provisions of these Special Conditions shall supersede and take precedence over conflicting counterpart provisions located elsewhere in the Contract Documents, and shall include additional provisions relating to the performance of this Contract.

However, no provisions under this Section shall be construed as relieving the Contractor from his contractual obligations in the performance and satisfactory completion of all work as specified and contracted form in said Contract Documents, except as may be duly authorized in writing by the Owner.

ARTICLE 2 - SCOPE OF PROJECT

The work to be performed under the various bid items of this contract shall include all plant labor, supervision, materials, equipment, and incidentals which may be required for the construction and completion of the proposed work unless otherwise specified for a particular bid item.

The scope of work for this contracts includes but is not limited to the ground up construction of a new Fire Station #6 for the Lafayette Fire Department, which will include all services providing a fully functional fire station. Work shall include but is not limited to: A new Metal and CMU framed, Brick and Metal wall panel clad, metal roof truss, asphalt shingle roofed building. Exterior work includes landscaping, concrete paving, and lawn equipment shed. The building shall be equipped with a sprinkler system, fire alarm system, and a natural gas-powered electric generator.

ARTICLE 3 - PLANS AND SPECIFICATIONS

The work to be performed under this Contract shall conform to the specifications contained herein and the plans for **A New Facility for: FIRE STATION no. 6**, Capital Improvements Program.

ARTICLE 4 - OWNER'S RIGHT TO AWARD THE CONTRACT

It is understood that the Owner reserves the right to adjust the approximate plan quantities of certain items of work, and/or to delete certain items of work, and/or to delete section(s) of the project by plan change agreement after award of the Contract, in order not to exceed the funds allotted for the project.

ARTICLE 5 - NOTICE TO PROCEED

The Contractor shall begin work on the date designated in the written Notice to Proceed. Work shall be prosecuted continuously and systematically except for delays beyond the

control of the Contractor. The Contractor shall be required to complete all work on the project within the number of calendar or working days stated in the Contract Documents.

ARTICLE 6 - RELOCATION AND/OR ADJUSTMENT OF UTILITIES

It shall be the Contractor's duty to conduct the construction operations in such a manner as to preserve and protect all utilities from damage, to give adequate and timely notification (at least one week) to the proper authorities of the utility companies prior to the commencement of construction activity, and to cooperate with said authorities in the prosecution of the work. The Owner and/or Architect assume no responsibility for any damages done to any utility as a result of work done under the performance of this Contract.

ARTICLE 7 - PRE-CONSTRUCTION CONFERENCE

PRE-CONSTRUCTION CONFERENCE - ARTICLE 23 - INFORMATION FOR BIDDERS REVISION

After award of the contract, Lafayette Consolidated Government will schedule a pre-construction conference. The pre-construction conference will be held prior to performing any work on the project, preferably no later than the issuance of the Notice to Proceed. Lafayette Consolidated Government will schedule the conference sufficiently in advance to permit the attendance of all parties concerned. The contractor is urged to have all sub-contractors in attendance at the pre-construction conference.

ARTICLE 8 - LIABILITY FOR LOSSES BY ACTS OF THE FEDERAL GOVERNMENT

It is distinctly understood and agreed by the parties to this Contract that the Owner shall not be liable for any loss or damage suffered by the Contractor arising out of the interruption or cessation of work under this Contract or for any loss suffered by the Contractor in the performance of his obligations under this Contract resulting from any order or act of any official or agency of the United States Government.

ARTICLE 9 - CANCELLATION OF CONTRACT

If, at any time during the process of the work, all of said work or all of the major controlling operations are delayed during any single period of time for more than ninety (90) consecutive calendar days, by reason of war conditions involving the United States, or by reason of orders of the United States Government or its duly authorized agencies, or Executive Order with respect to prosecution of war or national defense, the Owner may enter into an agreement of postponement with the Contractor covering postponement of the performance of part or all of the work for a specified period of time, or may cancel the Contract by notifying the Contractor in writing, of such action. If an agreement of postponement is made, it shall be executed by the Contractor and the Owner and shall be approved by the surety.

In the event of delay, as hereinabove provided, the Contractor shall be paid ninety percent (90%) of value of all work completed or partially completed, as provided in the specifications, in accordance with the terms of the agreement of postponement; or in the

event of cancellation of Contract, the Contractor shall be paid in full, in accordance with the terms of the Contract, for all work done and completed in accordance therewith; and he shall be paid a reasonable amount or amounts, which shall be fixed or determined by the Architect, for work partially completed, but he shall not be paid any amount for loss of anticipated gain or profit, or any work not performed or completed. Nothing herein contained shall be in derogation of any rights or remedies vested in or available to the Owner by the terms of the Contract.

Accepted materials obtained by the Contractor for the work that have been inspected, tested, and accepted by the Owner, and that are not incorporated in the work, may, at the option of the Owner, be purchased from the Contractor at actual cost as shown by receipted bills at such points of delivery as may be designated by the Owner.

ARTICLE 10 - PREFERENCE OF LABOR AND MATERIALS

The Contractor and each subcontractor shall, insofar as is practicable, give preference to qualified local labor in the hiring of workers for the project.

ARTICLE 11 - PARTIAL PAYMENTS

So long as the work herein contracted for is prosecuted in accordance with the provisions of the Contract, and with such progress as may be satisfactory to the Architect, the Architect will make or cause to be made, the first progress estimate the month following the Notice to Proceed. Each successive progress estimate will be made on this same date of each month thereafter until completion of the Contract. Each progress estimate shall be an approximation of the proportionate value of the work done up to and including the date the estimate is made and shall be based on material in place and labor expended thereon, but no more than ninety percent (90%) of the Contract price of the work for contracts less than \$500,000 and ninety-five percent (95%) of the contract price of the work for contracts greater than \$500,000 shall be paid in advance of full completion of the Contract and its acceptance by the Owner.

When payment on a bid item is to be made on a lump sum basis, and a definite payment schedule has not been established, the Contractor shall submit to the Architect, a schedule of values on the lump sum item. The schedule shall be submitted before the first application for payment and the schedule shall be prepared in such form and supported by data to substantiate its accuracy. No payments on lump sum items will be made until the breakdown is reviewed and approved by the Architect. Partial payment on lump sum items shall not in any respect be taken as an admission of acceptance of the completed work, nor shall it relieve the Contractor of any responsibility in completing the work.

ARTICLE 12 – CONSTRUCTION SCHEDULE

Prior to beginning the work the Contractor shall submit to the Project Architect a Construction Schedule giving a satisfactory detailed schedule of operations that provides for completion of the work within the contract time, identifies type and number of pieces of equipment to be used on the project, chronology of proposed phases of operations and time required to complete each phase. This schedule shall be on the prescribed bar graph form. Each activity in the schedule shall clearly reference a corresponding task (or sub task) in the

sequence of construction as provided by the Architect in the construction documents. Should the Contractor desire to vary the sequence of construction in order to make more effective use of his men, material and equipment, he is to prepare and submit a revised sequence of construction and a corresponding construction schedule in addition to that based on the Architect's sequence of construction. Only upon the Architect's written approval, the revised sequence of construction will be adopted. The Contractor shall have copies of the schedule available at the preconstruction conference.

If the Contractor's operations are affected by changes in the plans or amount of work or if the Contractor has failed (by altering the sequence of activities or being ten percent (10%) or more behind schedule) to comply with the approved schedule, or if requested by the Architect, the Contractor shall submit a revised Construction Progress Schedule for approval. The revised schedule shall show how the Contractor proposes to prosecute the balance of the work. If the Architect requests a revised schedule, the Contractor shall submit the revised schedule within fourteen (14) calendar days after the date of request or progress payments may be withheld.

ARTICLE 13 – DETERMINATION AND EXTENSION OF CONTRACT TIME

The time within which the work is required to be completed is of the essence of this contract. The contract time shall begin on the calendar day designated in the Notice to Proceed as provided for in Article 5 of this section.

On working day contracts, a working day will be charged when weather or other conditions not under the control of the contractor will permit construction operations to proceed for at least five (5) continuous hours of the day with the normal working force engaged in performing the controlling item of work for that day.

Should the Contractor prepare to begin work on any day in which inclement weather, or the conditions resulting from the weather, prevent work from beginning at the usual starting time, and the crew is dismissed as a result, the Contractor will not be charged for a working day whether or not conditions change during the day and the rest of the day becomes suitable for work.

No work days will be charged for days listed in General Conditions - Article 6 – Contract Time (a) and (b) contained herein, on a working day basis, except if the contractor elects to work on anyone of these days and is working on a contract pay item. The contractor shall not be permitted to perform work on owner recognized holidays listed in General Conditions – Article 6 – Contract Time (c) contained herein on either a working day and calendar day basis.

When the contract time is on a working day basis, the Architect will furnish the Contractor a monthly statement showing the number of days charged to the contract for the preceding month and the number of days specified for completion of the contract. The Contractor will be allowed fourteen (14) calendar days in which to file a written protest setting forth in what respect said monthly statement is incorrect; otherwise the statement shall be considered accepted by the Contractor as correct.

If the Contractor files a protest, the Architect/Architect will conduct such reviews and investigations as required to rule on the protest within thirty (30) calendar days from the date the statement is furnished by the Contractor. The number of days charged as listed, or revised within the allotted time, shall become final at the end of this thirty (30) day period, subject to change only through legal action.

When the contract time is a fixed calendar date, it shall be the date on which all work on the project shall be completed.

The Contract time for the work as awarded is based on the original quantities of the controlling items as shown in the bid proposal and includes time to procure material, equipment and an adequate labor force to complete the work. If satisfactory fulfillment of the contract requires performance of work in greater quantities than those specified, or requires performance of extra work in accordance with Article 18 – Increased or Decreased Quantities or Work and Article 19 – Change Orders, Payment for Extra or Deleted Work in the General Conditions section herein and the Contractor requests additional contract time, the document authorizing or ordering alterations will show the number of additional days justified.

If the Contractor finds it impossible, for reasons beyond the Contractor's control, to complete the work within the contract time as specified or as extended in accordance with the provisions of this Article, the Contractor may, at any time prior to the expiration of the contract time as extended, make written request to the Architect for an extension of time setting forth therein the reasons which justify granting the request. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Architect finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, the Architect may extend the contract time as defined in Article 7 – Delays and Extension of Time in the General Conditions herein.

The approved Construction Progress Schedule will be used as the basis of establishing the controlling item(s) of work, charging contract time and as a check on the progress of the work. The Construction Progress Schedule shall show controlling item(s) of work for each contract day and must be updated by the Contractor on a monthly basis, at minimum or more frequent if determined necessary.

ARTICLE 14 – TESTING AND INSPECTION OF MATERIALS

All materials and equipment used in the construction of the project shall be new and subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner. The Owner will pay for all laboratory inspection and testing services direct, and not as a part of the contract. However, in the event that a particular test fails due to failure to meet requirements on the contractor's part, then the Contractor will be required to pay for the services of re-testing as well as any inspection time associated with this re-testing. In the event that re-testing is necessary, the Owner will pay the cost of re-testing and additional inspection to the laboratory and will direct the Architect/Architect to deduct this amount from the Contractor's next partial payment application.

ARTICLE 15 - MAINTENANCE OF TRAFFIC AND OPERATIONS

Twenty-four (24) hours notice by the contractor to owners of private driveways shall be given prior to interfering with them.

Through traffic shall be allowed to use existing roads while work is going on in accordance with provisions of construction sequence as shown in the plans. Proper signs of design and wording approved by the Architect shall be displayed whenever work is going on to warn traffic of the condition of the road. The Contractor shall furnish flagmen to direct the traffic whenever required and shall use all safety precautions necessary such as but not limited to placing signs and flares. The Contractor shall have a motorized rubber wheel road grader on the job site. This grader shall be used to maintain all roads and roadways in a satisfactory condition approved by the Architect for the duration of the Contract. The Contractor shall have someone to receive calls and dispatch proper personnel and equipment on a twenty-four (24) hour basis for the purpose of traffic maintenance and emergencies. He shall provide the Owner and the Architect with a night phone number for this purpose. The Contractor shall maintain adequate sprinkler devices for such control, as well as adequate signs, barricades and flares.

The Contractor shall keep the police, fire protection, ambulance, and transit authorities informed at all times as to the location of construction operations. Fire lanes shall be maintained for fire-fighting equipment as requested by the fire department.

No direct payment will be made for providing for and maintaining traffic as required above as directed by the Project Architect, but all cost thereof shall be included in the contract price bid on pay items.

ARTICLE 16 - MOBILIZATION

This work consists of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the project site; the establishment of all offices, buildings and other facilities necessary for work on this project. Payment for mobilization shall be at the contract lump sum price for "Mobilization" as stated in the Proposal.

Partial payments for mobilization will be made in accordance with the following schedule up to a minimum of ten percent (10%) of the original total contract amount, including this item, and payment of any remaining amount will be made upon completion of all work under the contract.

Percent of Total Contract Amount Earned	Allowable Percent of the Lump Sum Price for Mobilization
1 st Partial Estimate	20
20	40
40	60
60	80
80	90
100	100

ARTICLE 17 - PAYMENT FOR NON-BID ITEMS

There shall be no specific payment for any items of work required on the plans or in these documents unless specifically included as a bid item. Payment for bid items shall be considered to include payment for other work not specified as a separate bid item.

ARTICLE 18 - POWER OF ATTORNEY

The power of attorney of the surety company signing the Performance Bond shall be attached to each of the executed copies of the Contract Documents.

ARTICLE 19 - SUBCONTRACTS

The portion of work allotted to be sublet shall constitute not more than fifty percent (50%) of the project. The computation of this percentage shall be based on all of the items shown on the bid form.

ARTICLE 20 - COOPERATION WITH UTILITIES

The Lafayette City-Parish Consolidated Government will notify all utility companies, pipeline owners or other parties affected and endeavor to have all necessary adjustments of the public or private utility fixtures, pipelines and other appurtenances within or adjacent to the limits of construction made as soon as possible, with the exception of adjusting manholes, adjusting sanitary sewer service lines, adjusting waterlines and new waterlines as designated on the plans.

Except as hereinafter provided, and regardless of whether the utility is shown on the plans or referred to in the project specifications, all gas lines, wire lines, service connections, gas valve boxes, light standards, cableways, signals and other utility appurtenances within the limits of construction which conflict with and prevent completion of the Contractor's work are to be relocated or adjusted by the owners through negotiations with the Lafayette City-Parish Consolidated Government at no expense to the Contractor.

Where a utility crosses or otherwise occupies an area within the construction limits of the project and the utility will not have the Lafayette City-Parish Consolidated Government's required clearance when the work is completed, it shall be the Lafayette City-Parish Consolidated Government's responsibility to arrange for necessary relocation to the required clearance, at no expense to the Contractor. If the required clearance will exist when the work is completed, the Contractor shall at his own expense, make arrangements with the owner for any relocation or adjustment he considers necessary to his operations. In such cases, upon completion of the work and prior to final acceptance, the final location of the utility must be acceptable to the Lafayette City-Parish Consolidated Government. Nothing in these requirements shall be interpreted directly or by implication, to mean that the Lafayette City-Parish Consolidated Government waives any of its rights to control the entrance onto, or location on, its right of way, of any utility or appurtenance.

It is understood and agreed that the Contractor has considered in his bid, all the permanent and temporary utility appurtenances in their present or relocated positions as shown on the plans and that no additional compensation will be allowed for any delays, inconvenience, or damage sustained by him due to any interference from the said utility appurtenances or the operation of moving them.

In general, the Contract will indicate any utility items, which are to be relocated, adjusted or constructed by the Contractor. The project specifications will indicate the means of adjudication, if any, in case of failure by the utility owner to comply with their responsibility in relocating or adjusting their facilities.

If the Architect determines that the Contractor is experiencing significant delays in the controlling item(s) of work because of the delays by others in removing, relocating or adjusting utility appurtenances, contract time credits will be considered for such delays.

On the date stipulated in the "Notice to Proceed", the Contractor shall begin work in connection with fencing, clearing, grubbing, removal of structures and obstructions, and relocation and demolishing of buildings and other structures, and shall prosecute such work to completion to avoid delays in removal or adjustment of utilities. The Contractor shall cooperate with officials of utility companies to avoid delays in completion of work due to non-removal or non-adjustment of utilities.

ARTICLE 21 - LANDS FOR WORK

The Contractor shall verify, prior to construction, that all rights of way, easements and construction servitudes have been acquired by the Lafayette Consolidated Government.

The Contractor shall contact the Project Architect prior to constructing any drainage structures to be located outside of the right-of-way to verify that the drainage easement has been obtained.

The Contractor shall limit his construction operations to the temporary easements shown on the plans. The Contractor shall not utilize any private area other than the herein mentioned easement unless he has a written agreement with the property owner.

ARTICLE 22 - CONTRACTOR'S SALES TAX RECEIPTS

Prior to award of the contract to the successful bidder, the Contractor shall submit to the Architect, a receipt from the Sales Tax Collector of the Lafayette City-Parish Consolidated Government and the Lafayette Parish School Board, as evidence that he has registered with the Sales and Use Tax Department.

ARTICLE 23 - LAWS, PERMITS AND FEES

The entire work shall comply with the rules and regulations of the City, Parish and State. All modifications required by these authorities shall be made without additional charge to the Owners. The Contractor shall report all required changes to the Architect and secure his approval before work is started.

ARTICLE 24 - MATERIALS AND EQUIPMENT

All materials, equipment and accessories installed under this contract, shall conform to all rules, codes, etc., as recommended by National Associations governing the manufacture, rating and testing of such materials, equipment and accessories. All materials must be new and of the best quality and first class in every respect. Whenever directed by the Architect, the Contractor shall submit a sample for approval before proceeding.

ARTICLE 25 - HAZARDOUS CONDITIONS

If, within twenty-four (24) hours after written notice, the Contractor has not corrected or remedied a hazardous condition or defect, the Owner shall take the necessary steps to correct same. All cost shall be charged to the Contractor, and if not paid, shall be withheld from his periodic estimate or from remaining monies due him.

ARTICLE 26 - ARCHITECT'S AUTHORITY

The Architect may alter the construction plans and specifications if he determines it is desirable. The Contractor will be reasonably reimbursed if such changes increase his cost and the Contractor will reasonably credit the Lafayette Consolidated Government should such changes reduce his cost.

ARTICLE 27 - MAINTENANCE OF DRAINAGE

The Contractor shall maintain adequate drainage during construction. The Contractor shall provide for the removal of water from the work area and shall maintain the work area reasonably dry at all times. Performance of this work is not payable directly, but shall be considered as a subsidiary obligation of the Contractor, covered under the contract price for the construction items.

ARTICLE 28 - CARE OF STREETS, SIDEWALKS AND ROADS

The Contractor shall be required, at his own expense, to remove all excess materials, debris or other obstruction from the streets or roads immediately after the backfilling has been completed. No cross streets, sidewalks or roads shall be wholly obstructed, except by special permission from the Architect or as stated elsewhere herein. If at any time, the Contractor neglects to remove such materials or obstruction and place streets, sidewalks, and roads in suitable condition for traffic within the calendar day after having received written notice from the Architect, the Owner may do the work, and the cost thereof charged to the Contractor and deducted from his final estimate. The Contractor shall repair or replace streets, sidewalks, roads and culverts to the satisfaction of the Architect and parties concerned.

The streets and roadways should remain clean at all times. Any debris or dirt, which may be wet from excavation, shall be removed as soon as practicable to minimize the hazard to traffic.

The Contractor shall be responsible for repair of all damages caused to the existing streets and roads by his operations at no extra cost to the Owner except as shown on the plans and written in the Bid Form.

ARTICLE 29 - PROPERTY CORNERS

Property corner pipe and/or iron rods or right-of-way markers that have to be moved during construction will be done by the Owner by referencing with four points that will not be disturbed either before, during, or after construction, and witnessed by the property owner affected, the Architect and a representative of the Contractor. The Owner shall determine the location of property corners. Upon completion of construction, the property corner pipe or other marker shall be placed in its original location, again having the same witnesses. If this is impractical, then its relationship to its original location will be given the property owner.

ARTICLE 30 - MATERIAL STORAGE

Materials delivered to the site of the work in advance of their use shall be stored as to cause the least inconvenience and in a manner satisfactory to the Architect. Materials stored for extended periods shall be protected from the weather and conditions that may damage the material in a manner satisfactory to the Architect.

When Contractor's equipment, materials or any other item is stored on private lands, the Contractor shall be required to produce a written agreement with the landowner stating the agreed terms and conditions. A copy shall be given to the Owner prior to occupying the property.

ARTICLE 31 - CONSTRUCTION SAFETY REGULATIONS

The Contractors and all Sub-contractors shall be required to comply with all the applicable Safety and Health Standards promulgated by the Secretary of Labor under Section 107, Part 1585 of the Contract Work Hours and Safety Standards Act, latest edition. These rules and regulations shall take precedence over any other counterpart of these plans and specifications in conflict herewith.

ARTICLE 32 - TRUCK MEASUREMENT

All truck beds used for truck-measured material shall be initially measured by the Project Architect or his representative prior to use for that purpose.

If a partially loaded truck bed is used, the material shall be struck off level and the depths of the material measured shall be taken to determine the volume.

ARTICLE 33 – VIDEO INSPECTION OF SUBSURFACE DRAINAGE SYSTEM

The contractor shall conduct a video inspection of the subsurface drainage system no sooner than sixty (60) calendar days prior to completion of the contract. By performing the video inspection, the contractor acknowledges that he has inspected the entire subsurface drainage system and that the system is clean of **ALL** debris, including, but not limited to, form work,

silt and all foreign materials. If debris is encountered during the video inspection, the contractor will remove and clean debris from the subsurface drainage system at no cost to the Owner.

ARTICLE 34 - AFFIDAVIT

The successful bidder will be required to execute the Non-Collusion Affidavit found hereafter in these Specifications.

ARTICLE 35 – INSURANCE

INSURANCE - ARTICLE 32 - GENERAL CONDITIONS REVISION

The successful contractor will be required to furnish an Accord or approved by the Louisiana Commissioner of Insurance certificate of insurance including: Item I: Standard Workers' Compensation Insurance with Statutory limits and Employers' Liability of \$1,000,000.00, Item II: Commercial General Liability Insurance in the amount of \$2,000,000.00 having Underground Explosion and Collapse Hazard (XCU) in the amount of \$2,000,000.00, Item III: Business Auto Liability Insurance with minimum coverage of \$1,000,000.00.

Item V and VII shall be worded exactly as stated on our Information Certificate of Insurance attached.

Any other requirements found in Article 32 of the General Conditions not addressed above shall be applicable.

BUILDERS RISK – ARTICLE 33 – GENERAL CONDITIONS REVISION

The Contractor shall effect and maintain until the substantial completion of the work, insurance for Builders Risk in the amount of \$4,000,000.00.

Flood insurance shall not be required.

All other requirements found in Article 33 of the General Conditions not addressed above shall be applicable.

ARTICLE 36 – STOCKPILE MATERIALS

With the prior consent of Owner, Contractor may purchase in advance materials to be used in the construction of the work and may stockpile same at a location agreed upon by Owner. However, notwithstanding prior payment for same, the risk of loss as a result of damage, theft, or otherwise to said stockpiled materials shall remain with Contractor and advance payment shall in no way relieve Contractor from its obligation to install said stockpiled materials as and when needed to complete the work. Owner shall require Contractor to execute an acknowledgment of Contractor's continuing risk of loss and shall additionally require consent to the payment from Contractor's bonding company.

All stockpile material shall be labeled identifying that it is to be used for the specific project it was purchased for and only for Lafayette Consolidated Government projects. All stockpile material shall be safely secured and protected as determined satisfactory by the Owner and/or Architect.

Only materials stored on site and confirmed by the Professional of Record will be considered for payment by FP&C.

ARTICLE 37 - STORM WATER POLLUTION PREVENTION PLAN

The Storm Water Pollution Prevention Plan (SWPPP) included and shall be made a part of the contract. The Contractor's water pollution and erosion preventive measures shall include, but not be limited to, all provisions set forth in the SWPPP including record keeping and reporting.

Silt fencing shall be furnished and installed as indicated in the documents. Maintenance of fencing shall be included in the price for SWPPP. Silt fencing shall conform to the following requirements:

- **Wire-Supported:**

Wire-supported silt fencing shall consist of standard woven livestock wire, a minimum of 14-gage wire, and a minimum of 46-inches in height, with a maximum wire spacing of six (6) inches. Posts shall be either wood or steel installed a minimum of two (2) feet in the ground. Filter material shall be burlap weighing approximately 7 ½ ounces per square yard, approved jute fabric or approved geotextile fabric. Geotextile fabric for silt fencing shall conform to Louisiana DOTD Standard Specifications for Roads and Bridges, Section 1019.01, Class F, and shall be listed on Qualified Products List (QPL) 61.

- **Self-Supported:**

Self-supported silt fencing shall consist of an approved geotextile fabric suitably attached to posts of either steel or wood installed a minimum of two (2) feet in the ground. Geotextile fabric shall conform to Louisiana DOTD Standard Specifications for Roads and Bridges, Section 1019.01, Class G, and shall be listed on Qualified Products List (QPL) 61.

ARTICLE 38 - PRIVATE AND PUBLIC PROPERTY

The Contractor shall carry on his work in such a manner so as to protect public and private property. The Contractor shall be responsible for any and all damages or alleged damages to private property that may result from his operations. All land which has been disturbed in any manner by construction operations shall be accurately graded for drainage, cleared of all debris and extraneous materials and left in a neat and presentable condition. No burning of trash, brush, wood, or debris on site will be permitted without prior approval of the Architect or Owner.

ARTICLE 39 – ATTESTATIONS AFFIDAVIT

In accordance with La. R.S. 38:2227, La. R.S. 38:2212.10 and La. R.S. 23:1726 (B) the low bidder on this project must submit the completed Attestations Affidavit (Past Criminal Convictions of Bidders, Verification of Employees and Certification Regarding Unpaid Workers Compensation Insurance) form found within this bid package.

The Attestations Affidavit form of the LOW BIDDER shall be RECEIVED by Office of Purchasing & Property Management Division of Finance & Management, no later than **ten (10) days after opening of bids.** The submission should be identified with the name of the bidder, project name, project number and the words ATTESTATIONS AFFIDAVIT. Failure to submit this form within ten (10) days after the bid shall be cause for declaring bid non responsive and the public entity may award the bid to the next lowest bidder and afford the next lowest bidder not less than ten days from the date the apparent low bidder is declared non-responsive to submit the proper information and documentation as required by the bidding documents and may continue such process until the public entity either determines the low bidder or rejects all bids.

Form may be sent via US mail, express mail or hand delivered to:

Physical Address:
Lafayette Consolidated Government
Purchasing & Property Management
705 W. University Avenue
Lafayette LA 70506

Mailing Address
Lafayette Consolidated Government
Purchasing & Property Management
PO Box 4017-C
Lafayette LA 70502

ARTICLE 40 – PROPERTY REQUIREMENTS (IF APPLICABLE)

The awarded vendor shall provide to the Property Control Officer at Lafayette Consolidated Government an itemized listing of equipment showing Model, Make, Serial Number and cost of equipment. For further information, please contact the Property Control Officer at (337) 291-8260.

ARTICLE 41 – CERTIFICATE OF AUTHORITY

Sample Certificate of Authority found in the specifications may be used in lieu of a Corporate Resolution. A Corporate Resolution or Certificate of Authority authorizing the person signing the bid must be signed by an officer or registered agent listed with the Secretary of State and must be included with the bid. Failure to submit a Corporate Resolution or Certificate of Authority agent shall be cause for rejection of bid.

ARTICLE 42 – NON-APPROPRIATION OF FUNDS

Delete Article 55 of the General Conditions in its entirety. This project will be fully funded prior to the Advertisement of the Bid.

END OF SECTION

VENDOR INFORMATION FORM

Please complete the following information and return this form with your bid. This information is needed if you are awarded the bid.

PROJECT NAME: **A New facility for: FIRE STATION NO. 6**

COMPANY NAME: _____

CONTACT PERSON (if other than person who signed bid): _____

DATE: _____

MAILING ADDRESS: _____

CITY/STATE/ZIP: _____

REMITTANCE ADDRESS: _____

CITY/STATE/ZIP: _____

TELEPHONE NUMBER: _____ FAX NUMBER: _____

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: Lafayette Consolidated Government
705 W. University Avenue
Purchasing Division
PO Box 4017-C
Lafayette, LA 70502
(Owner to provide name and address of owner)

BID FOR: A New Facility for:
Fire Station no. 6

(Owner to provide name of project and other identifying information)

The undersigned bidder hereby declares and represents that she/he; a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: Trahan Architecture + Planning, LLC and dated: 5/4/2023
(Owner to provide name of entity preparing bidding documents)

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) _____

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of:

_____ Dollars (\$ _____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1 *(Owner to provide description of alternate and state whether add or deduct)* for the sum of:

_____ **N/A** Dollars (\$ _____ **N/A**)

Alternate No. 2 *(Owner to provide description of alternate and state whether add or deduct)* for the sum of:

_____ **N/A** Dollars (\$ _____ **N/A**)

Alternate No. 3 *(Owner to provide description of alternate and state whether add or deduct)* for the sum of:

_____ **N/A** Dollars (\$ _____ **N/A**)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER:** _____

DATE: _____

THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

**A CORPORATE RESOLUTION OR WRITTEN EVIDENCE of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)5.

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA R.S. 38:2218(A) attached to and made a part of this bid.

BID BOND

Date: _____

KNOW ALL MEN BY THESE PRESENTS:

That _____ of _____, as Principal, and _____, as Surety, are held and firmly bound unto the Lafayette City-Parish Consolidated Government, Lafayette, Louisiana (Obligee), in the full and just sum of five (5%) percent of the total amount of this bid, including all alternates, lawful money of the United States, for payment of which sum, well and truly be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

Surety represents that it is listed on the current U. S. Department of the Treasury Financial Management Service list of approved bonding companies as approved for an amount equal to or greater than the amount for which it obligates itself in this instrument or that it is a Louisiana domiciled insurance company with at least an A - rating in the latest printing of the A. M. Best's Key Rating Guide. If surety qualifies by virtue of its Best's listing, the Bond amount may not exceed ten percent of policyholders' surplus as shown in the latest A. M. Best's Key Rating Guide.

Surety further represents that it is licensed to do business in the State of Louisiana and that this Bond is signed by surety's agent or attorney-in-fact. This Bid Bond is accompanied by appropriate power of attorney.

THE CONDITION OF THIS OBLIGATION IS SUCH that, whereas said Principal is herewith submitting its proposal to the Obligee on a Contract for:

A New Facility for: Fire Station no. 6

NOW, THEREFORE, if the said Contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter into the Contract in writing and give a good and sufficient bond to secure the performance of the terms and conditions of the Contract with surety acceptable to the Obligee, then this obligation shall be void; otherwise this obligation shall become due and payable.

PRINCIPAL (BIDDER)

SURETY

BY: _____
AUTHORIZED OFFICER-OWNER-PARTNER

BY: _____
AGENT OR ATTORNEY-IN-FACT (SEAL)

SAMPLE CORPORATE RESOLUTION

The attached document is a sample document only. You may submit your Corporate Resolution that you currently have on file or you may elect to use this format as an acceptable form of a Corporate Resolution.

A signed copy of your Corporate Resolution is required to be submitted with your bid regardless of who is authorized to sign the bid. Failure to submit your Corporate Resolution with your bid shall be cause for rejection of bid.

Company Letterhead

Address
Phone
Fax

Certificate of Authority

Lafayette Consolidated Government

Attn: _____

705 West University Ave.

Lafayette, LA 70502

Re: **Specific Project Name or left blank for Any Project**

To Whom It May Concern,

I, individually and on behalf of **Company Name**, do by my signature below, certify that:

Company Name is a **limited liability company (if LLC, or define type)** duly organized and existing under the laws of **Louisiana**;

I am the **Secretary, an officer of the Company**, authorized to sign on its behalf: and

Name, President, is an officer of the Company authorized to make, execute and approve, on behalf of this Company, any and all contracts, or amendments thereof, entered into by and between **Company Name** and the Lafayette Consolidated Government.

In witness whereof, I hereby set my hand this _____ day of _____, 20__.

Signature

Name

Company Title

Company Name

Phone Fax Etc.

Notary

Seal

A New Facility for: Fire Station no. 6
Name of Project

PW# 1839
Project No.

STATE OF _____

PARISH OF _____

ATTESTATIONS AFFIDAVIT

Before me, the undersigned notary public, duly commissioned and qualified in and for the parish and state aforesaid, personally came and appeared Affiant, who after being duly sworn, attested as follows:

L.A. R.S. 38:2227 PAST CRIMINAL CONVICTIONS OF BIDDERS

A. No sole proprietor or individual partner, incorporated, director, or manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes:

- | | |
|--------------------------------------|-----------------------------------|
| (a) Public bribery (R.S.14:118) | (c) Extortion (R.S. 14:66) |
| (b) Corrupt influencing (R.S.14:120) | (d) Money laundering (R.S. 14:23) |

B. Within the past five years from the project bid date, no sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes, during the solicitation or execution of a contract or bid awarded pursuant to the provisions of Chapter 10 of Title 38 of the Louisiana Revised Statutes:

- | | |
|---|--|
| (a) Theft (R.S. 14:67) | (f) Bank fraud (R.S. 14:71.1) |
| (b) Identity Theft (R.S. 14:67.16) | (g) Forgery (R.S. 14:72) |
| (c) Theft of a business record
(R.S. 14:67.20) | (h) Contractors; misapplication of
payments (R.S. 14:202) |
| (d) False accounting (R.S. 14:70) | (i) Malfeasance in office (R.S. 14:134) |
| (e) Issuing worthless checks
(R.S. 14:71) | |

L.A. R.S. 38:2212.10 Verification of Employees

- A. At the time of bidding, Appearer is registered and participates in a status verification system to verify that all new hires in the state of Louisiana are legal citizens of the United States or are legal aliens.
- B. If awarded the contract, Appearer shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the state of Louisiana.
- C. If awarded the contract, Appearer shall require all subcontractors to submit to it a sworn affidavit verifying compliance with Paragraphs (A) and (B) of this Subsection.

A New Facility for: Fire Station no. 6
Name of Project

PW# 1839
Project No.

L.A. R.S. 23:1726 (B) Certification Regarding Unpaid Workers Compensation Insurance

- A. R.S. 23:1726 prohibits any entity against whom an assessment under Part X of Chapter 11 of Title 23 of the Louisiana Revised Statutes of 1950 (Alternative Collection Procedures & Assessments) is in effect, and whose right to appeal that assessment is exhausted, from submitting a bid or proposal for obtaining any contract pursuant to Chapter 10 of Title 38 of the Louisiana Revised Statutes of 1950 and Chapters 16 and 17 of Title 39 of the Louisiana Revised Statutes of 1950.
- B. By signing this bid / proposal, Affiant certifies that no such assessment is in effect against the bidding / proposing entity.

NAME OF BIDDER

NAME OF AUTHORIZED SIGNATORY OF BIDDER

DATE

TITLE OF AUTHORIZED SIGNATURE OF BIDDER

**SIGNATURE OF AUTHORIZED
SIGNATORY OF BIDDER/AFFIANT**

Sworn to and subscribed before me by Affiant on the ____ day of _____, 20 ____.

Notary Public

**CONTRACT FORM
LABOR, MATERIALS AND SUPPLIES**

THIS AGREEMENT, made and entered into this _____ day of _____, 20____, by and between the Lafayette City-Parish Consolidated Government, Lafayette, Louisiana, and _____, in the State _____ of Party of the Second Part, hereinafter called the "Contractor".

WITNESSETH:

WHEREAS: The Purchaser has caused the necessary Contract Documents to be prepared for defining a construction project to be installed for the Lafayette City-Parish Consolidated Government, consisting of

A New Facility for: FIRE STATION NO. 6

WHEREAS: The Purchaser has advertised for bids from Contractors, has received said bids, analyzed same and duly awarded a contract to the "Contractor, Party of the Second Part", for construction as hereinafter set forth and as stated more in detail in the quotation and related Contract Documents to wit: Advertisement to Bid, Instructions to Bidders, Bid Form, General Conditions, Special Conditions, Standard Specifications, Drawings, Performance and Payment Bonds, and Plans, all of which documents are made a part of this contract: and

WHEREAS: It is agreed and understood that the construction and installation of the above enumerated work by the Contractor shall be completed, accepted and ready for use within the days specified as follows: within **Three hundred Sixty-Five (365) calendar days** from the effective date of the Notice to Proceed. In default thereof, the Contractor shall be liable for liquidated damages in the amount as provided in Article 31 of the General Conditions.

NOW, THEREFORE, it is hereby agreed that for the sum of _____
(\$ _____) for the term of the Agreement, the Contractor agrees to perform all work in accordance with the Contract Documents, plans and specifications which are as much a part of the agreement as if repeated verbatim herein. This is the maximum amount payable by the Purchaser to the Contractor and shall not be increased or decreased unless adjusted by change order.

IT IS FURTHER AGREED AND UNDERSTOOD between the parties hereto that the Contractor shall accept and the Purchaser will pay for the work as described above at the prices stipulated in the bids and the payment shall be made at the time and in the manner set forth in the specifications.

IN WITNESS THEREOF: The Parties of the First and Second Parts have hereto set their hands and seals on the day and year above written.

Executed in Two (2) Counterparts

LAFAYETTE CITY-PARISH
CONSOLIDATED GOVERNMENT
LAFAYETTE, STATE OF LOUISIANA

WITNESSES:

BY: _____
JOSHUA S. GUILLORY
MAYOR-PRESIDENT

CONTRACTOR'S WITNESSES:

CONTRACTOR:
PARTY OF THE SECOND PART

BY: _____
Signature

NAME: _____
Type or print name

TITLE: _____
Type or print title

AFFIDAVIT

STATE OF _____

PARISH OF _____

This ____ day of _____, 20____, personally came and appeared before me, the undersigned Notary Public, duly commissioned and qualified within and for the Parish of _____, State of _____, _____, who, after being by me duly sworn, did depose and say that he has been selected as Contractor for the Lafayette Consolidated Government on the **A New Facility for: Fire Station no. 6** and that he does hereby certify in compliance with L.R.S. 38:2224 that he has employed no person, corporation, firm, association or other organization, either directly or indirectly, to secure the Contract for the above mentioned public project, other than persons regularly employed by him whose services in connection with the construction of said public project or in securing the Contract for same were in the regular course of their duties for him; and, that no part of the contract price received, or to be received, by him was paid or will be paid to any person, corporation, firm, association or other organization for soliciting the Contract, other than the payment of their normal compensation to persons regularly employed by him whose services in connection with the construction of said public project were in the regular course of their duties for him, and further declares that he has in no way entered into a collusion to increase the cost of the project and has no knowledge of such collusion on the part of any sub-contractor or suppliers of material to him for this project.

APPEARER FURTHER DECLARES that he will, in all respects, comply with the public contract laws of the State of Louisiana, including Title 38 of the Louisiana Revised Statutes, and particularly Section 2224 of said Title 38 of the Louisiana Revised Statutes.

Sworn to and subscribed before me this ____ day of _____, 20__.

(Notary Public)

PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, the undersigned _____ as Principal, and _____ a Corporation duly authorized to transact business in the State of Louisiana, as Surety, are held and firmly bound unto the Lafayette City-Parish Consolidated Government, existing under the laws of the State of Louisiana, in the penal sum of

_____ lawful money of the United States, for the payment of which will and truly to be made, the said surety does hereby bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally, by these presents as follows:

WHEREAS, the Principal has entered into a Contract with the Lafayette City-Parish Consolidated Government, bearing the date of _____, for A New Facility for: FIRE STATION NO 6 upon certain terms and conditions, completely set out in said Contract; and

WHEREAS, it was one of the conditions of award by the Consolidated Government, pursuant to which the contract hereinabove referred to was entered into, that these presents shall be executed:

NOW, THEREFORE the conditions of this obligation are such that if the Principal shall in all respects fully comply with the terms and conditions of said Contract and his obligations thereunder, including the specifications, proposals and plans therein referred to and made a part thereof, and such alterations as may be made on such plans and specifications as therein provided for, and shall indemnify and save harmless the Consolidated Government against or from all costs, expenses, damages, injury or loss, to which the Consolidated Government may be subjected by reason of any wrongdoing, misconduct, want of care or skill, negligence, or default including patent infringement on the part of the Principal, his agents or employees, in the execution of performance of said Contract, and shall promptly pay all claims for damages or injury to property and for work done, or skill, tools, machinery, supplies, labor and materials furnished and debts incurred by the Principal in or about the performance of the work contracted for, this obligation to be void.

And the Surety, for value received hereby stipulates and agrees that no change, extension of time, or alteration or addition to the terms of the Contract or the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the specifications.

PERFORMANCE AND PAYMENT BOND

This bond shall be for the use of the Consolidated Government and all persons doing work or furnishing skill, tools, machinery or materials for the purpose of the Contract herein above referred to.

In Testimony whereof, the Principal and the Surety have caused these presents to be duly signed and sealed in two (2) counterparts this _____ day of _____, _____.

EXECUTED IN TWO (2) COUNTERPARTS

WITNESSES:

BY _____

BY _____

LA. LICENSE NO. _____

SECTION IX

CONTRACTOR'S CERTIFICATE OF INSURANCE

Information purposes only

THIS IS TO CERTIFY TO:	LAFAYETTE CONSOLIDATED GOVERNMENT
	P. O. BOX 4017-C
	LAFAYETTE, LOUISIANA 70502

That the following described policies in at least the face amounts shown below have been issued to:

Name of Insured:

Address of Insured:

Effective for the policy periods shown within the State of **LOUISIANA**.

THIS CERTIFICATE OF INSURANCE NEITHER AFFIRMATIVELY NOR NEGATIVELY AMENDS, EXTENDS, OR ALTERS THE COVERAGE AFFORDED BY POLICIES SHOWN BELOW. (CHECK APPLICABLE COVERAGES):

TYPE OF POLICY AND COVERAGE	COMPANY	NUMBER	POLICY PERIOD	POLICY MINIMUM	LIMITS OF LIABILITY LIABILITY LIMITS, UNLESS OTHERWISE REQUIRED BY CONTRACT		
I. ● STANDARD WORKER'S COMPENSATION EMPLOYER'S LIABILITY					STATUTORY \$1,000,000		
II. ● COMMERCIAL GENERAL LIABILITY A. ● Premises Operations B. ● Independent Contractor's Liability C. ● Products-Completed Operations D. ● Contractual Liability E. ● Broad Form Property Damage					LIABILITY IN THOUSANDS		
					EACH OCCURRENCE		
					Bodily Injury		\$2000
					Property Damage		\$2000
					BI & PD Combined		\$2000
POLICY DOES ● DOES NOT <input type="checkbox"/> PROVIDE COVERAGE FOR UNDERGROUND EXPLOSION AND COLLAPSE HAZARD					\$2,000,000		
BUILDERS RISK ●					\$4,000,000.00		
III. ● BUSINESS AUTO LIABILITY A. ● Any Auto B. ● Owned C. ● Non-Owned D. <input type="checkbox"/> Hired					LIABILITY IN THOUSANDS		
					Bodily Injury Per Accident		\$1000
					Bodily Injury Per Accident		\$1000
					Property Damage		\$1000
					BI & PD Combined		\$1000
IV. <input type="checkbox"/> UMBRELLA LIABILITY					BI & PD Combined		\$1000
NOTE:	Lower primary limits will be accepted if Umbrella Liability Coverage is provided with limits of at least \$500,000 in excess of primary coverage shown in this certificate.						
V. ● Lafayette City-Parish Consolidated Government, its officials, employees, and volunteers shall be listed as additional insured on all liability policies.							
VI. ● Coverage afforded the Lafayette City-Parish Consolidated Government, its officials, employees, and volunteers as insureds, applies as primary and not excess or contributing to any other insurance issued in the name of the named or additional insured(s).							
VII. ● A waiver of subrogation shall be provided in favor of the named additional insureds on the Workers' Compensation Insurance policy.							
IN THE EVENT OF CANCELLATION OF THE POLICY OR POLICIES OR MATERIAL CHANGES IN SUCH POLICIES, THE CERTIFICATE HOLDER SHALL RECEIVE THIRTY (30) DAYS PRIOR WRITTEN NOTICE OF SUCH CANCELLATION OR CHANGE AT THE ADDRESS STATED ABOVE BEFORE SUCH CANCELLATION OR CHANGE IS EFFECTIVE AGAINST THE CERTIFICATE HOLDER.							
THE ATTACHED CERTIFICATE OF INSURANCE CORRELATES DIRECTLY WITH THE INSURANCE REQUIREMENTS OF THE CONTRACT. THE LAFAYETTE CONSOLIDATED GOVERNMENT REQUIRES THEREFORE THAT HIS PARTICULAR CERTIFICATE BE USED FOR APPROVAL OF THE CONTRACT.				BY:			
					AUTHORIZED REPRESENTATIVE:		
					ADDRESS:		
Date:							



May 3, 2018

Dear Bidder:

As an economic development initiative, the Lafayette City-Parish Council has adopted the Small and Emerging Business Program. This program will assist you in identifying subcontractors who may be able to provide you with competitive pricing for your bids.

Attached is a list of contractors who are recognized by the Lafayette Consolidated Government as a Small and Emerging Business. Whenever you have an opportunity, please consider subcontracting with one of these businesses. By subcontracting with these businesses you will not only find competitive pricing, but you will contribute to the economic development of Lafayette Parish. As you peruse this list, you may discover that you have subcontracted with some of these businesses in the past.

Your participation in this economic development initiative is greatly appreciated.

Sincerely,

Shaun P. Williams
Title VI/ADA Coordinator

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Accounting Services, System Installation and Training				
	Accounting Assistant		124 Hummingbird Lane Lafayette, LA 70506	Lafayette	337-989-8107
541611	Administrative Management and General Management Consulting Services				
	PFSG, Inc		2306 Kaliste Saloom Road Lafayette, LA 70508	Lafayette	337-984-4431
	KCB Capital Management	Certified DBE	150 Briscoe Road Opelousas, LA 70570	St. Landry	337-948-2030 capital_management@charter.net
541199	All Other Legal Services				
	Mars Marketing International	Certified DBE	111 Horizon Lane Lafayette, LA 70507	Lafayette	337-354-7612 morg02a@aol.com
238990	All Other Specialty Trade Contractors				
	Mayo Consulting Services	Certified DBE	2342 Larkspur Lane Opelousas, LA 70570	St. Landry	337-678-1805 mayo9696@yahoo.com
238990	All Other Specialty Trade Contractors (Fencing)				
	Calvin Martin Fence		215 Paul Breau Ave Lafayette, LA 70501	Lafayette	337-232-7951
	Stripe Force 1, Inc	Certified DBE	128 Thrush Loop Lafayette, LA 70508	Lafayette	337-984-9008 bpdowell@bellsouth.net
238330	All Other Specialty Trade Contractors (Flooring)				
	Thomas Branded Construction	Certified DBE	110 Travis Street Suite 2 Lafayette, LA 70503	Lafayette	337-288-9967 tiffany@tbranded.com
238330	All Other Specialty Trade Contractors (Paving)				
	Capital Area Construction, LLC	Certified DBE	4710 Cherrywood Street Port Allen, LA 70767	West Baton Rouge	225-439-9625 capitalarea3@gmail.com
	Plan B Solutions, LLC	Certified DBE	PO Box 496 Maurice, LA 70555	Vermilion	337-424-5858 lexi.planbsolutions@gmail.com

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Matt L Guinn Construction	Certified DBE	1716 Industrial Drive Jennings, LA 70546	Jefferson Davis	337-824-2105 matt@mlgconstruction.com
	All Other Specialty Trade Contractors (Portable Restrooms)				
	Potty Girl	Certified DBE	110 Sugarland Drive Broussard, LA 70518	Lafayette	337-296-2006 deborahWpottygirla.com
541310	Architectural Services				
	Vermilion Architects	Certified DBE	101 Hamilton Place Lafayette, LA 70501	Lafayette	337-234-4166 angelique@vermilionarchitects.com
811121	Automotive Body, Paint, and Interior Repair and Maintenance				
	Malveaux's Collison & Restoration		905 Cameron Street Lafayette, LA 70501	Lafayette	337-261-1954
	Rapid Paint and Body Shop		1605 N. Bertrand Lafayette, LA 70503	Lafayette	337-291-2556
611692	Automobile Driving Schools				
	A Freeman Driving School and Education	Certified DBE	Abe Freeman Lafayrtte, LA 70506	Lafayette	337-267-7979 abe@afreemaninsurance.com
812112	Beauty Salons				
	Hair Plus		1602 North University Lafayette, LA 70501	Lafayette	337-233-7841
238350	Carpentry Contractors, Finished				
	Wylekat Builders	Certified DBE	213 Woodland Circle New Iberia, LA 70563	Iberia	337-889-1580 jeffjimmy1969@yahoo.com
722320	Caterers				
	Café' Evergreen		1601 Eraste Landry Lafayette, LA 70506	Lafayette	337-232-8284

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
624410	Child Day Care Services				
	Whiz Kids Early Childhood Learning		4011 Moss Street Lafayette, LA 70507	Lafayette	337-233-7370
621310	Chiropractic Services				
	Dr. John Sullivan, Chiropractor		105 Interpendence Blvd. Ste 1 Lafayette, LA 70506	Lafayette	337-984-9276
524291	Claims Adjusting				
	P & M Investigations		PO Box 90741 Lafayette, LA 70509	Lafayette	337-593-8246
448110	Clothing Stores, Men's				
	Fit For A King, Inc.		406 Attakapas Lafayette, LA 70501	Lafayette	337-261-1131
448120	Clothing Stores, Women				
	Amy Claire, Inc		3809 Ambassador Caffery Ste 104C Lafayette, LA 70503	Lafayette	337-981-2692
236220	Commercial and Institutional Building Construction				
	Capital Area Construction, LLC	Certified DBE	4710 Cherrywood Street Port Allen, LA 70767	West Baton Rouge	225-439-9625 capitalarea3@gmail.com
	Overton Construction		PO Box 215 Livonia, LA 70755		225-6373805
	World Wide Contractors		908 Kessington Drive Lafayette, LA 0	Lafayette	
	First Millenium Construction, LLC		908 Arthur Street Lafayette, LA 70501	Lafayette	337-593-2200 dee.blackburn@bellsouth.net
	T.J.L Builders		123 Tournior Street Lafayette, LA 70506	Lafayette	337-234-6285
	C-Core, Inc.		7258 Grand Praire Rayne, LA	Acadia	337-873-6410 n@ccoreinc.com

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Sartin Builders	Certified DBE	100 Leaf Circle Duson, LA 70529	Lafayette	337-207-4775 zeb.sartin@gmail.com
	Thomas Branded Construction	Certified DBE	110 Travis Street Suite 2 Lafayette, LA 70503	Lafayette	337-288-9967 tiffany@tbranded.com
	Daryl Mitchell Welding & Construction	Certified DBE	112 N. Cemetery Street St. Martinville, LA 70582	St. Martin	337-247-3395 madeline.mitchell@yahoo.com
	Wylekat Builders	Certified DBE	213 Woodland Circle New Iberia, LA 70563	Iberia	337-889-1580 jeffjimmy1969@yahoo.com
	Guye's Construction	Certified DBE	1102 S. Union Street Opelousas, LA 70570	St. Landry	337-678-0077 jjguye@yahoo.com
	KWA, Inc.	Certified DBE	114 Wagon Trail Opelousas, LA 70570	St. Landry	337-942-5759 kwarvie@bellsouth.net
532412	Construction, Mining, and Forestry Machinery and Equipment Rental and Leasing				
	Acadiana Companies	Certified DBE	PO Box 1403 Crowley, LA 70727	Acadia	337-783-8803 keith.klumpp@acadianacompanies.com
	Construction, Residential				
	Sartin Builders	Certified DBE	100 Leaf Circle Duson, LA 70529	Lafayette	337-207-4775 zeb.sartin@gmail.com
	Thomas Branded Construction	Certified DBE	110 Travis Street Suite 2 Lafayette, LA 70503	Lafayette	337-288-9967 tiffany@tbranded.com
	Wylekat Builders	Certified DBE	213 Woodland Circle New Iberia, LA 70563	Iberia	337-889-1580 jeffjimmy1969@yahoo.com
	Guye's Construction	Certified DBE	1102 S. Union Street Opelousas, LA 70570	St. Landry	337-678-0077 jjguye@yahoo.com
	KWA, Inc.	Certified DBE	114 Wagon Trail Opelousas, LA 70570	St. Landry	337-942-5759 kwarvie@bellsouth.net
811212	Computer and Office Machine Repair and Maintenance				
	CompuStar		2671 Main Highway Breaux Bridge, LA 70517	St. Martin	337-991-2505
	E & E Computers, LLC		2808 West Pinhook Road Ste #5 Lafayette, LA 70508	Lafayette	337-233-2446

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Express Computers		103 West Main Broussard, LA 70508	Lafayette	337-367-8368
	Qsystem Computers Inc		7104 Highway 103 Ste. 101 Washington, LA 70589	St. Landry	1-800-214-0927
	Esprit Consulting	Certified DBE	214 St. Esprit Road Carencro, LA 70520	Lafayette	337-336-0473 espritroy@gmail.com
541512	Computer Systems Design Services				
	RC3 Consulting		211 Adrienne Street Lafayette, LA 70502	Lafayette	337-236-3220
	Esprit Consulting	Certified DBE	214 St. Esprit Road Carencro, LA 70520	Lafayette	337-336-0473 espritroy@gmail.com
	Telecommunications Development Corporation	Certified DBE	1919 13th Street NW Washington, DC 20009		202-234-9400 jwoodyard@telcomdc.com
811318	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance				
	Superior Group, Inc	Certified DBE	PO Box 191 Youngville, LA 70592	Lafayette	337-856-8512
	Huntington Oilfield Services, LLC	Certified DBE	200 Midway Street Lafayette, LA 70506	Lafayette	337-235-5274
	Diesel Fuelmasters, LLC		942 Fire Tower Road Spearsville, LA 71277	Lafayette	863-993-3835
323111	Commercial Printing (except Screen and Books)				
	Universal Communications		114 W. Vermilion Ste. 208 Lafayette, LA 70501	Lafayette	337-237-1612
	Insignia Grpahics, Inc.		3419 NW Evangeline Thru B-8 Lafayette, LA 70520	Lafayette	337-896-5184
518210	Data Processing, Hosting, and Related Services				
	Professional Documents, Inc.		209 Halcott Drive Lafayette, LA 70503	Lafayette	337-988-5434
	Esprit Consulting	Certified DBE	214 St. Esprit Road Carencro, LA 70520	Lafayette	337-336-0473 espritroy@gmail.com

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
541340	Drafting Services				
	Harris Design		128 Demande Blvd Ste. 212 Lafayette, LA 70503	Lafayette	337-266-9900
238310	Drywall and Insulation Contractors				
	Wylekat Builders	Certified DBE	213 Woodland Circle New Iberia, LA 70563	Iberia	337-889-1580 jeffjimmy1969@yahoo.com
238210	Electrical Contractors and Other Wiring Installation Contractors				
	Total Computer Solutions, Inc.		3419 NW Evangeline Thru Ste A-8 Carencro, LA 70520	Lafayette	337-886-2827
	Deep South Communications, LLC		1755 George O'Neal Baton Rouge, LA 70817	East Baton Rouge	225-802-9000 rhett@deepsouthcommunications.com
	CA-Par Electric, Inc		PO Box 1323 Kenner, LA 70063		504-465-3750
	C & S Coatings Inspections, Inc		207 Wilbourn Street Lafayette, LA 70506	Lafayette	337-981-1876
	Curtis Nelson Electric, LLC		5718 Fremin Road, Lot #1 New Iberia, LA 70560	Iberia	337-369-7973 nels93@aol.com
	Syntergy		821 Westford Street Carencro, LA 70520	Lafayette	337-781-4979 groenbalm@syntergyems.com
	Metro Electric & Maintenance	Certified DBE	PO Box 5021 Lafayette, LA 70502	Lafayette	337-232-3539 charlieriser@bellsouth.net
	Helpful Hands Handy Services	Certified DBE	404 Pandora Street Lafayette, LA 70506	Lafayette	337-356-2374 helpfulhandshandy@gmail.com
	KWA, Inc.	Certified DBE	114 Wagon Trail Opelousas, LA 70570	St. Landry	337-942-5759 kwarvie@bellsouth.net
561311	Employment Placement Agencies				
	Express Employment Professionals	Certified DBE	100 Beauvais Avenue B-3 Lafayette, LA 70507	Lafayette	337-896-6066 arica.prejean@expresspros.com
541330	Engineering Services				

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	McBade Engineers & Consultants	Certified DBE	207 Iberia Street Youngville, LA 70592	Lafayette	337-451-5823 pamelag@mcbadeengineers.com
	ILSI Engineering		1100 Poydras Ste. 2775 New Orleans, LA 70163		504-523-1619
	Metro Electric & Maintenance	Certified DBE	PO Box 5021 Lafayette, LA 70502	Lafayette	337-232-3539 charlieriser@bellsouth.net
541380	Environmental Testing Laboratories or Services				
	ALTEC Environmental Consultants, Inc		P.O. Box 220 BROUSSARD, LA 70518	Lafayette	
	O.W.S. ENVIRONMENTAL SERVICES		P.O. BOX 93123 LAFAYETTE, LA 70509	Lafayette	
	Environmental Sampling		335 Teljean Road Lafayette, LA 70507	Lafayette	337-989-7070
	Ethos Environmental & Project Mangement Solutions	Certified DBE	112 Pascalet Place Lafayette, LA 70507	Lafayette	734-972-3105 kim.mcintyre@live-ethos.com
	Jesco Evnironmental & Geotech, Inc.	Certified DBE	PO Box 1324 Jennings, LA 70546	Jefferson Davis	337-824-9074 ateal@jescous.com
561710	Exterminating and Pest Control Services				
	Al's Pest Control		109 Northern Ave Lafayette, LA 70501	Lafayette	337-233-5692
332996	Fabricated Pipe and Pipe Fitting Manufacturing				
	Plasic of Ranye		141 Llame Road Ranye, LA 70578	Lafayette	
332312	Fabricated Structural Metal Manufacturing				
	Daryl Mitchell Welding & Construction	Certified DBE	112 N. Cemetery Street St. Martinville, LA 70582	St. Martin	337-247-3395 madeline.mitchell@yahoo.com
	I and I Contracting Services	Certified DBE	4614 Theriot Road New Iberia, LA 70560	Iberia	337-577-2359 phayarath@iandicontractingservices.com
	Vast Industries	Certified DBE	108 Venus Road, Suite #200 Morgan City, LA 70380	St. Mary	985-312-1592 yvette@vast-ind.com

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
238990	Fencing				
	Calvin Martin Fence Calvin Martin		215 Paul Breaux Ave Lafayette, LA 70501	Lafayette	337-232-7951
238330	Flooring Contractors				
	Wylekat Builders	Certified DBE	213 Woodland Circle New Iberia, LA 70563	Iberia	337-889-1580 jeffjimmy1969@yahoo.com
	KWA, Inc.	Certified DBE	114 Wagon Trail Opelousas, LA 70570	St. Landry	337-942-5759 kwarvie@bellsouth.net
424930	Flower, Nursery Stock, and Florists' Supplies Merchant Wholesalers				
	D & S Flowers & Rentals		1602 North University Avenue Lafayette, La 70501	Lafayette	337-289-6850
238130	Framing Contractor				
	Capital Area Construction, LLC	Certified DBE	4710 Cherrywood Street Port Allen, LA 70767	West Baton Rouge	225-439-9625 capitalarea3@gmail.com
	Wylekat Builders	Certified DBE	213 Woodland Circle New Iberia, LA 70563	Iberia	337-889-1580 jeffjimmy1969@yahoo.com
	KWA, Inc.	Certified DBE	114 Wagon Trail Opelousas, LA 70570	St. Landry	337-942-5759 kwarvie@bellsouth.net
442110	Furniture Stores				
	Heem's Woodworks & Custom Funiture		112 Prejean Road Carencro, LA 70520	Lafayette	337-886-8673
424410	General Line Grocery Merchant Wholesalers				
	ORB Enterprises, Inc.		819 Whitmeore Road Scott, LA 70583	Lafayette	337-873-6874
	Nanny's Candy Company, LLC	Certified DBE	3823 N. University Carencro, LA 70520	Lafayette	337-896-5682 angelbellard@bellsouth.net
	Zydeco Foods, LLC	Certified DBE	PO Box 53767 Breaux Bridge, LA 70505	St. Martin	337-232-2310 goodhealth@mydecobars.com
453220	Gift, Novelty, and Souvenir Stores				

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Cajun Country Store, Inc.		401 Cypress Street Lafayette, LA 70501	Lafayette	337-233-7977
237310	Highway, Street, and Bridge Construction				
	JD's Rebar and Construction, Inc		1348 Rapides Avenue Alexandria, LA 71301	Rapides	318-561-2977 harl118john@aol.com
	Plan B Solutions, LLC	Certified DBE	PO Box 496 Maurice, LA 70555	Vermilion	337-424-5858 lexi.planbsolutions@gmail.com
	Stripe Force 1, Inc	Certified DBE	128 Thrush Loop Lafayette, LA 70508	Lafayette	337-984-9008 bpdowell@bellsouth.net
	Matt L guinn Construction	Certified DBE	1716 Industrial Drive Jennings, LA 70546	Jefferson Davis	337-824-2105 matt@mlgconstruction.com
621610	Home Health Care Services				
	Always Care Assisted Home Living		201 Open Meadows Lafayette, LA 70506	Lafayette	337-981-6060
541612	Human Resources Consulting Services				
	Janue Resources		PO Box 51853 Lafayette, LA 70505	Lafayette	337-233-8696
423840	Industrial Supplies Merchant Wholesalers				
	Gulf Coast Industrial Supply Inc.		524 Cedar Crest Court Lafayette, LA 70503	Lafayette	337-216-0976
524210	Insurance Agencies and Brokerages				
	A Freeman Insurance Agency	Certified DBE	4103 Cameron Street Lafayette, LA 70506	Lafayette	337-267-7979 abe@afreemaninsurance.com
541410	Interior Design Services				
	A Plus Interiors		518 St. Patrick Street Lafayette, LA 70506	Lafayette`	337-856-8656
523930	Investment Advice				

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Francis Financial Group, LLC	Certified DBE	400 Poydras Street Suite 2400 New Orleans, LA 70130		504-566-3958
561720	Janitorial Services				
	Expert Maintenace Services, LLC		PO Box 741 Prairieville, LA 70769	Ascension	225-910-1121 jjmoore@3atel.net
	Hubb's Properties, LLC		37393 White Road Prairieville, LA 70769	Ascension	225-281-4614 ttmksr@cox.net
	Sherman & Associates	Certified DBE	PO Box 1169 Carencro, LA 70520	Lafayette	337-886-7889 janice_sherman@bellsouth.net
	3 Frenchmen Janitorial	Certified DBE	718 South Buchanan Street Lafayette, LA 70501	Lafayette	337-235-5988
	BKD Janitorial Service		133 Radcliffe Drive Lafayette, LA 70501	Lafayette	337-237-7807
	Briscoe'e Janitorial Service		207 Breaux Road Lafayette, LA 70507	Lafayette	337-896-0777
	C Reynolds Cleaning Service, LLC		PO Box 52927 Lafayette, LA 70505	Lafayette	
	Clifton Joseph Janitorial Service		289 Mecca Drive Lafayette, LA 70508	Lafayette	337-233-4749
	Derouen's Janitorial Service, INC.		333 Teljean Road Lafayette, LA 70501	Lafayette	
	Fuselier's Janitorial		502 12th Street Lafayette, LA 70501	Lafayette	337-234-9600
	Journet's Janitorial Service		Lafayette, LA	Lafayette	337-237-4906
	Lewis Services	Certified DBE	PO Box 81187 Lafayette, LA 70598	Lafayette	337-232-0675
	Liberty Painting & Janitorial Services		225 Chester Street Lafayette, LA 70501	Lafayette	337-277-0193
	Melancon's Janitorial		310 Monarch Lafayette, LA 70506	Lafayette	337-232-4050
	R.H. Janitorial Service & Paint Contractor		410 Edison Street Lafayette, LA 70501	Lafayette	337-237-5434

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Duhon and Alfred Professional Parking Lot Cleaners		P.O. Box 5421 Lafayette, LA 70502	Lafayette	
	Justice Janitorial Services, LLC		13632 Goodwood Dr. Baton Rouge, LA 70815	East Baton Rouge	
	Francis Janitorial Services Inc.		817 Pitt Rd. Scott, LA 70583	Lafayette	
	Damon Enterprises, LLC		1029 Noon Street Rayne, LA 70578	Acadia	
	C Reynolds Cleaning Service, LLC		P.O. Box 52957 Lafayette, LA 70505	Lafayette	
	VnC Janitorial Service		P.O. Box 383 Crowley, LA 70528	Acadia	
	DEPENDABLE JANITORIAL SERVICES		109 POLARIS ST LAFAYETTE, LA 70501	Lafayette	
	Derouen's Janitorial Service, Inc.		333 Teljean Rd. LAFAYETTE, LA 70503	Lafayette	
	EXPERIENCE JANITORIAL		P O Box 82474 LAFAYETTE, LA 70598	Lafayette	
	JAC's Janitorial		129 Sunset Loop SUNSET, LA 70584	St. Landry	
	Deep South Supply, LLC		1520 Nethrlin Avenue Pineville, LA 71360	Rapides	318-664-0039
	Hubb's Properties, LLC		9984 Westerly Avenue Baton Rouge, LA 70806	East Baton Rouge	225-281-4614 ttmksr@cox.net
	J.R. Rolands		1921 Susek Drive Pineville, LA 71360	Rapides	318-640-1201
	Kathy's Cleaning Service		7006 Monroe Highway Pineville, LA 71360	Rapides	318-419-1620
	Light House Cleaning Service		5419 Sabina Drive Alexandria, LA 71303	Rapides	318-487-1269
	Matt's Janitorial Service & Supply		2210 Lee Street Alexandria, LA 71307	Rapides	318-445-8707 cmatt222@aol.com
	Micheal's Janitorial Services		135 Kennedy Drive Lafayette, LA 70501	Lafayette	337-344-8772

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Sharp and Clean	Certified DBE	203 Milton Estates Youngsville, LA 70592	Lafayette	337-303-8628 sharpclean@yahoo.com
	Williams Cleaning Wizards	Certified DBE	PO Box 454 Maurice, LA 70555	Vermilion	
	Brad Smith Janitorial	Certified DBE	133 Friendship Street Lafayette, LA 70501	Lafayette	337-269-4788 charlotteannsmith2014@gmail.com
561730	Landscaping Services				
	Clark Construction & Maintenance LLC		183 Ocean Drive Baton Rouge, LA 70806	East Baton Rouge	225-216-2667 yvalle1@lsu.edu
	First Mlllennium Construction, LLC		5700 Florida Boulevard Suite 500 Baton Rouge, LA 70806	East Baton Rouge	225-923-4639 nathian@bellsouth.net
	HD Truck & Tractor LLC		5501 Opelousas street Lake Charles, LA 70615	Calcasieu	337-439-9710 jenad@hdtmail.com
	Hubb's Properties, LLC		37393 White Road Prairieville, LA 70769	Ascension	225-281-4614 ttmksr@cox.net
	Janice Cormier Contracting LLC		656 Wilson Bridge Road Washington, LA 70589	St. Landry	337-826-3742
	Josie's Nursery		PO Box 314 Forest Hill, LA 71430	Rapides	318-748-4682 rophe11@aol.com
	Perero Companies, Inc.	Certified DBE	3409 Captain Cade Road Broussard, LA 70518	Lafayette	337-364-6131
	Quality Contr. Specialists, Inc. Janice Law		PO Box 999 Westlake, LA 70669	Calcasieu	337-882-6100 jlaw@wb4me.com
	Tarver Land Development LLC Robby Tarver		PO Box 14448 Alexandria, LA 71315	Rapides	318-619-1123 shirrea@tarverland.com
	Thunderbolt Construction, LLC Brenda Tarver		Po Box 68 Center Point, LA 71323	Rapides	318-792-1837
	Wilton Red Landscape and Contruction Inc Wilton Valmont		2230 North Kingswood Drive Lake Charles, LA 70605	Calcasieu	337-794-5691 wwvalmont@yahoo.com
	Woodson's Lawn Service		320 Fluer des Coteau Opelousas, LA 70570	St. Landry	

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Beau Monde Landscape LLC		103 Declouet Ave. Lafayette, LA 70506	Lafayette	
	Russell's Demolition & Lawn Service		606 N. Lemaire Kaplan, LA 70548	Vermillion	
	DELCAMBRE'S TREE & LAWN SERVICE		2709 VALERY RD NEW IBERIA, LA 70560	Iberia	
	Derouen's Janitorial Service, Inc.		333 Teljean Rd. Lafayette, LA 70503	Lafayette	
	L & R Cleaning		P.O. Box 956 YOUNGSVILLE, LA 70592	Lafayette	
	Melancon's Tree Removal		418 Winn Rd SUNSET, LA 70584	St. Landry	
	Russell's Demolition & Lawn Service		606 N. Lemaire KAPLAN, LA 70548	Vermillion	
	Amos Landscaping & Lawn Service, LLC	MBE	306 Grossie Drive Lafayette, LA 70501	Lafayette	337-233-2645
	B & A All Around Brice Hector		129 St. Marguerite Street Lafayette, LA 70501	Lafayette	337-264-9556
	Beau Monde Landscaping, LLC		103 Declouet Avenue Lafayette, LA 70506	Lafayette	337-704-6267
	First Millennium Construction, LLC		908 Arthur Street Lafayette, LA 70806	Lafayette	337-593-2200 nathian@bellsouth.net
	HD Truck & Tractor, LLC		150 Marine Street Lake Charles, LA 70615	Calcasieu	337-439-9710
	Janice Cormier Contracting LLC		656 Wilson Bridge Road Washington, LA 70589	St. Landry	337-826-3742
	Josies Nursery, Inc.		12 Pine Street Forest Hill, LA 71430	Rapides	337-748-4682
	Little Tree Landscape		1817 Plantation Oaks Baton Rouge, LA 70879	East Baton Rouge	225-938-0695
	Imahara Landscape Co., Inc.		8660 Perkins Road Baton Rouge, LA 70810	East Baton Rouge	225-767-2250
	Little Tree Landscape		1817 Plantation Oaks Baton Rouge, LA 70879	East Baton Rouge	225-938-0695

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Lewis Services	Certified DBE	PO Box 81187 Lafayette, LA 70598	Lafayette	337-232-0675
	World Wide Contractors		305 Kessington Drive Lafayette, LA 70508	Lafayette	337-826-4395
	MICO, Inc		1300 West Elm Street Eunice, LA 70535	St. Landry	337-457-0701
541613	Marketing Consulting Services				
	223 Guidry Road	Certified DBE	223 Guidry Road Unit B Lafayette, LA 70503	Lafayette	337-281-1593 contactus@ghosaresearch.com
238140	Masonry Contractors				
	BCP Enterprises	Certified DBE	603 Foreman Drive Lafayette, LA 70506	Lafayette	337-257-1487 bcpenterprise11@yahoo.com
	Wylekat Builders	Certified DBE	213 Woodland Circle New Iberia, LA 70563	Iberia	337-889-1580 jeffjimmy1969@yahoo.com
541410	Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers				
	Lafayette Medical Enterprises, Inc		116 Kol Drive Broussard, LA 70518	Lafayette	337-837-4394
423120	Motor Vehicle Supplies and New Parts Merchants Wholesalers				
621399	Nutritionists				
	Keystone Partners	Certified DBE	101 Vinemont Drive Lafayette, LA 70501	Lafayette	337-356-2244 keystonepartners@outlook.com
423420	Office Equipment Merchant Wholesalers				
	Brewster Procurement Group, Inc.	Certified DBE	509 1/2 Steveson Street Lafayette, LA 70501	Lafayette	337-291-9009
237120	Oil and Gas Pipeline and Related Structures Construction				
	Le Natural Gas Services, LLC	Certified DBE	102 Park West Drive Lafayette, LA 70583	Lafayette	337-232-1664 stacie@lngsllc.com

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
621320	Optometrists				
	Specs Optical, Inc.		431 B East Pont Des Mouton Road Lafayette, LA 70507	Lafayette	337-593-8777
238290	Other Building Equipment Contractors				
	Papa Jeabert's Inc		530-C West Pinhook Lafayette, LA 70503	Lafayette	337-267-4468
444190	Other Building Material Dealers				
	Metal Studs		606 Cobblestone Road Lafayette, LA 70508	Lafayette	337-234-9797
423690	Other Electronic Parts and Equipment Merchant Wholesalers				
	i10 Districbution	Certified DBE	Travis Street #136 Lafayette, LA 70503	Lafayette	337-789-4753 sales@110distribution.com
561790	Other Services to Buildings and Dwellings				
	Acadiana Pressure Washing Service		114 Dogwood Drive Lafayette, LA 70501	Lafayette	337-234-7086
485991	Other Transit and Ground Passenger Transportation/ Special Needs Transportation				
238320	Painting and Wall Covering Contractors				
	Blue Ribbon Painting	Certified DBE	105 Salvador Lafayette, LA 70507	Lafayette	337-654-3584 blue-ribbonpainting@yahoo.com
	W Group Incorporated		113 Country Morning Court Lafayette, LA 70508	Lafayette	337-381-0634 wgroupinc@hotmail.com
	Liberty Painting & Janitorial Services		225 Chester Street Lafayette, LA 70501	Lafayette	337-277-0193
	R.H. Janitorial Service & Paint Contractor		410 Edison Street Lafayette, LA 70501	Lafayette	337-237-5434

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	JMA Painters	Certified DBE	412 W University Ave Suite 201 Lafayette, LA 70506	Lafayette	337-534-8665 jason@jmapainters.com
	Perfection Construction	Certified DBE	117 South Meyers Drive Lafayette, LA 70508	Lafayette	337-781-2770 theperfectionconstruction@gmail.com
	Sartin Builders	Certified DBE	100 Leaf Circle Duson, LA 70529	Lafayette	337-207-4775 zeb.sartin@gmail.com
	Wylekat Builders	Certified DBE	213 Woodland Circle New Iberia, LA 70563	Iberia	337-889-1580 jeffjimmy1969@yahoo.com
238220	Plumbing, Heating, and Air Conditioning				
	Ashby HVAC, LLC David Ashby		5164 Hemingway Drive Darrow, LA 70775	Ascension	225-257-4368 kattiashby@cox.net
	A & S Plumbing Alcide Washington		104 North Manor Street Lafayette, LA 70501	Lafayette	337-319-4835
	Antwine Plumbing and Heating, Inc.		6100 Dixie Lane Alexandria, LA 71307	Rapides	318-443-4146 antwineplumbinginc@cox-internet.com
	Williams A/C & Heating Light Construction LLC		3331 Hudson Boulevard Alexandria, LA 71302	Rapides	318-790-4001
	Comfort Innovations, LLC		3025 Twelve Oaks Avenue Baton Rouge, LA 70820	East Baton Rouge	225-937-5538 kfloyd2@hotmail.com
	Prejean Service Company, Inc		209 Stamp Street Lafayette, LA 70501	Lafayette	337-237-7086
238110	Poured Concrete Foundation and Structure Contractors				
	Keiland Construction, LLC Keith Dourousseau		600 Bayou Pines East, Suite G Lake Charles, LA 70601	Calcasieu	337-436-6846 evette@keilandllc.com
	Knighten Consstruction Co. Michael Knighten		PO Box 485 Maringouin, LA 70757	Point Coupee	225-806-3711 mjknighten@yahoo.com
	Lamb Construction Joseph Lamb		210 Old River Road Alexandria, LA 71302	Rapides	318-443-4441
	Lee's Concrte Brenda Lee Goodlow		4315 North Foster Drive Baton Rouge, LA 70805	East Baton Rouge	225-358-1831 leesconcrete@hotmail.com

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Robert Lewis Contractor, Inc. Donna Lewis		PO Box 7423 Alexandria, LA 71306	Rapides	318-442-6134 rlcontractor21@yahoo.com
	Quality Contr. Specialists, Inc. Janice Law		PO Box 999 Westlake, LA 70669	Calcasieu	337-882-6100 jlaw@wb4me.com
	RCS Contractors, Inc Roland Alonso		3390 Southern Pacific Road Port Allen, LA 70767	West Baton Rouge	225-388-9094 rcscon@msn.com
	Willie J Hamilton Cement Contractor Willie J. Hamilton		63354 Manor Drive Alexandria, LA 71302	Rapides	318-473-8651 hampwj@yahoo.com
	Wilton Red Landscape and Contruction Inc Wilton Valmont		2230 North Kingswood Drive Lake Charles, LA 70605	Calcasieu	337-794-5691 wwwvalmont@yahoo.com
	Andrew C. Senegal Cement Finishing Ancrew C. Senegal		941 St.Charles Street Lafayette, LA 70502	Lafayette	337-269-1477
	Chris' Concrete Works, LLC Christopher Moffett		Lafayette, LA	Lafayette	337-319-5263
	Moving Forward Home Enterprises, LLC Earl Turner		112 Hillside Drive #39 Lafayette, LA 70503	Lafayette	337-849-1243
	L & M Rod Busters & Cement Finishers Larry Fitzgerald		4001 Elton Court Lake Charles, LA 70607	Calcasieu	337-540-7755
	Graystone Construction Company, Inc		1306 Main Streete Baton Rouge, LA 70802	East Baton Rouge	225-267-5997
	The Knighten Brothers Company		PO Box 355 Marinouin, LA 70757	Point Coupee	225-774-8162
	Johnny M. Lee		4315 North Foster Baton Rouge, LA 70805	East Baton Rouge	225-358-1831
	Robert Lewis Contractor, Inc.		6600 Lower Third Street Alexandria, LA 71306	Rapides	318-442-6134
	Malbrough Construction Co., Inc.		2042 11th Street Lake Charles, LA 70601	Calcasieu	337-436-6698
	Phylway Conconstruction LLC		1074 A Highway 1 Thibodeaux, LA 70301	Terrebone	985-446-9644 padams@phylway.com
	Johnsson's Foundation James Johnson		1372 Sora Street Baton Rouge, LA 70807	East Baton Rouge	225-354-0018

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Purnell Construction Co., Inc. Eric Purnell		1200 S. Acadian Thruway 70806 Baton Rouge, LA 70806	East Baton Rouge	225-343-1888
	Ray Bar Contractors, Inc. M.L. Raymond		2630 Needham Drive Baton Rouge, LA 70812	East Baton Rouge	225-923-0680
	Sartin Builders	Certified DBE	100 Leaf Circle Duson, LA 70529	Lafayette	337-207-4775 zeb.sartin@gmail.com
512250	Record Production and Distribution				
	Lucky Cat Records		217 Jackson Street Lafayette, LA 70501	Lafayette	337-269-5153
562910	Remediation Services				
	Health Systems 2000, Inc.		1901 Oak Park Lake Charles, LA 70601	Calcasieu	337-562-1140 kmiller@hhc2000.com
236118	Residential Remodelers				
	C & E Contractors of Lafayette		211 Liberty Avenue Apt. 231 Lafayette, LA 70508	Lafayette	337-981-8255
	B & M Industries, Inc.		113 Nolan Broussard, LA 70518	Lafayette	337-837-2771
	Sartin Builders	Certified DBE	100 Leaf Circle Duson, LA 70529	Lafayette	337-207-4775 zeb.sartin@gmail.com
	Thomas Branded Construction	Certified DBE	110 Travis Street Suite 2 Lafayette, LA 70503	Lafayette	337-288-9967 tiffany@tbranded.com
	Daryl Mitchell Welding & Construction	Certified DBE	112 N. Cemetery Street St. Martinville, LA 70582	St. Martin	337-247-3395 madeline.mitchell@yahoo.com
	Wylekat Builders	Certified DBE	213 Woodland Circle New Iberia, LA 70563	Iberia	337-889-1580 jeffjimmy1969@yahoo.com
722513	Restaurants, Limited-Service				
	Creole Fried Chicken		201 1/2 Lacobie Street Lafayette, LA 70501	Lafayette	337-886-4774

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
238160	Roofing Contractors				
	C & C Noel, Inc.		99 Beth Drive Lafayette, LA 70501	Lafayette	
	Capital Area Construction, LLC	Certified DBE	4710 Cherrywood Street Port Allen, LA 70767	West Baton Rouge	225-439-9625 capitalarea3@gmail.com
	Wylekat Builders	Certified DBE	213 Woodland Circle New Iberia, LA 70563	Iberia	337-889-1580 jeffjimmy1969@yahoo.com
	A-1 Affordable Fencing Company		7258 Grand Prairie Highway Rayne, LA 70578	Acadia	337-873-7889 celeste@affordablefencecompany.infor
	Ercon Corporation		PO Box 61770 Lafayette, LA 70596	Lafayette	337-837-4118
213112	Sandblasting				
	Huntington Oilfield Services, LLC	Certified DBE	200 Midway Street Lafayette, LA 70506	Lafayette	337-235-5274 www.huntingtionoilfieldservice.com
561622	Security Guards and Patrol Services				
	Beson Security		2600 South Loop W. Ste 210 Houston, TX 77054		713-661-2090
	Crescent Guardian Incorporated		4640 S. Carrollton Ave Ste 100 New Orleans, LA 70119		504-483-7811
561621	Security Systems Services (except Locksmiths)				
	All State Protective Service	Mirt, Williams III	PO Box 1882 Baton Rouge, LA 70821	East Baton Rouge	225-346-0974 mwilliams@aspsla.com
	A-1 Fire & Safety, Inc		1040 Poche Bridge Road Breaux Bridge, LA 70517	St. Martin	337-332-3092
	Crown Security, LLC Steven Jones		PO Box 2244 Lake Charles, LA 70602	Calcasieu	337-478-0006 sjones@crownsecurity.com

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Scout Security Analysis and Training	Certified DBE	209 Barton Terrace Youngsville, LA 70592	Lafayette	337-315-9058 trevor.richard@scouttsat.com
332322	Sheet Metal Work Manufacturing				
	Hayes Manufacturing Co., Inc. James Hayes		PO Box 3309 Pineville, LA 71361	Rapides	318-487-0100 james@hayesmanufacturing.com
	Hebert's Machine Shop		1005 American Legion Drive Rayne, LA 70578	Acadia	
	Savant Precision Machine, Inc		112 Pine Park Drive Lafayette, LA 70508	Lafayette	337-235-9656
339950	Sign Manufacturing				
	Larry Richard & Associates	Certified DBE	3113 Avery Island Road New Iberia, LA	Iberia	337-365-0159
	Rufco, Inc		806 C East Main Street Broussard, LA 70518	Lafayette	337-405-3612
	Strip Force 1, Inc	Certified DBE	128 Thrush Loop Lafayette, LA 70508	Lafayette	337-984-9008 bpdowell@bellsouth.net
	Acadiana Companies	Certified DBE	PO Box 1403 Crowley, LA 70727	Acadia	337-783-8803 keith.klumpp@acadianacompanies.com
	Matt L Guinn Construction	Certified DBE	1716 Industrial Drive Jennings, LA 70546	Jefferson Davis	337-824-2105 matt@mlgconstruction.com
238910	Site Preparation Contractors				
	Capital Area Construction, LLC	Certified DBE	4710 Cherrywood Street Port Allen, LA 70767	W. Baton Rouge	225-439-9625 capitalarea3@gmail.com
	Acadiana Companies	Certified DBE	PO Box 1403 Crowley, LA 70727	Acadia	337-783-8803 keith.klumpp@acadianacompanies.com
	Derouen's Heavy Equipment		1131 La Maison Road Duson, LA 70529	Lafayette	337-873-6336
	Overton Construction		PO Box 215 Livonia, LA 70755		225-637-3805

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Site Development Services	Certified DBE	3510 Oliver Road Jeanerette, LA 70544	Iberia	337-579-0925 dextervallot@gmail.com
	Plan B Solutions LLC	Certified DBE	PO Box Suite 504 Maurice, LA 70555	Vermilion	337-424-5858 lexi.planbsolutions@gmail.com
	Matt L Guinn Construction	Certified DBE	1716 Industrial Drive Jennings, LA 70546	Jefferson Davis	337-824-2105 matt@mlgconstruction.com
423720	Solar Panels				
	Louisiana Solar Solutions		311 Red Oak Circle Lafayette, LA 70506	Lafayette	337-298-0011 info@gosolarlafayette.com
423910	Sporting and Recreational Goods and Supplies Merchant Wholesalers				
	LL Fitness, Inc.		117 D Cason Road Broussard, LA 70518	Lafayette	337-837-1965
238120	Structural Steel and Precast Concrete Contractors				
	Acadiana Companies	Certified DBE	PO Box 1403 Crowley, LA 70727	Acadia	337-783-8803 keith.klumpp@acadianacompanies.com
	Capital Area Construction, LLC	Certified DBE	4710 Cherrywood Street Port Allen, LA 70767	West Baton Rouge	225-439-9625 capitalarea3@gmail.com
517919	Telecommunications				
	New Orleans Teleport Inc. DBA Causplus	Certified DBE	PO Box 51808 Lafayette, LA 70505	Lafayette	337-262-6080 customercare@callsplus.net
	Esprit Consulting	Certified DBE	214 St. Esprit Road Carencro, LA 70520	Lafayette	337-336-0473 espritroy@gmail.com
	Metro Electric & Maintenance	Certified DBE	PO Box 5021 Lafayette, LA 70502	Lafayette	337-232-3539 charlieriser@bellsouth.net
561320	Temporary Help Services				
	Plan B Solutions, LLC	Certified DBE	PO Box 496 Suite 504 Maurice, LA 70555	Vermilion	337-424-5858 lexi.planbsolutions@gmail.com
238340	Tile and Terrazzo Contractors				

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Thomas Branded Construction	Certified DBE	110 Travis Street Suite 2 Lafayette, LA 70503	Lafayette	337-288-9967 tiffany@tbranded.com
484110	Trucking, General Freight, Local				
	For the Family Truckin', LLC		701 Teurlings Drive Lafayette, LA 70501	Lafayette	337-347-1716 martin23dalance@yahoo.com
	JDA Trucking, Inc	Certified DBE	299 St. Espirit road Carencro, LA 70520	Lafayette	337-280-6439
	S.C.K. Trucking & General Construction		PO Box 403 Pauline, LA 70763		225-869-0824 scktruck@charter.net
	Wilbert Simon Trucking	Certified DBE	3317 Livingston Road New Iberia, LA 70560	Iberia	337-364-0139 kllsimon@aol.com
	AIG Transport	Certified DBE	100 Chardonay Circle Broussard, LA 70518	Lafayette	337-735-4143 aigtransport2016@gmail.com
	D.K Enterprise III, LLC	Certified DBE	114 Ambroise Street Lafayette, LA 70501	Lafayette	337-504-1059 dkenterprise107@yahoo.com
	Genesis Trucking	Certified DBE	101 Sanro Road Lafayette, LA 70507	Lafayette	337-257-5605 bronick1953@yahoo.com
	Broussard Trucking	Certified DBE	2129 Prairie Hayes Road Branch, LA 70516	Acadia	337-296-9233 horsebroussard@yahoo.com
	C.J. Sam Trucking, LLC	Certified DBE	115 Avanti Drive Carencro, LA 70520	Lafayette	337-896-0723 msam01@bellsouth.net
	H.G. Thomas Trucking	Certified DBE	3453 Grand Point Hwy Breux Bridge, LA 70517	St. Martin	337-315-3045 thomas_trucking43@yahoo.com
	Sears Trucking, LLC	Certified DBE	2117 Highway 182 East Morgan City, LA 70380	St. Mary	985-519-0485 msears1939@ymail.com
	Native Ohoyo Construction	Certified DBE	10901 Agnes Plantation Road Abbeville, LA 70510	Vermilion	337-303-5537 nativeohoyoconstruction@gmail.com
484220	Trucking, Specialized Freight (except Used Goods), Local				
	Site Development Services	Certified DBE	3510 Oliver Road Jeanerette, LA 70544	Iberia	337-579-0925 dextervallot@gmail.com
562119	Waste Collection, Other				

2007 NAICS	Description				
	Company Name Contact Name	Status	Address	Parish	Phone Email
	Potty Girl	Certified DBE	110 Sugarland Drive Broussard, LA 70518	Lafayette	337-296-2006 deborahWpottygirla.com
238190	Welding (Other Foundation, Structure, and Building Exterior Contractors)				
	Daryl Mitchell Welding & Construction	Certified DBE	112 N. Cemetery Street St. Martinville, LA 70582	St. Martin	337-247-3395 madeline.mitchell@yahoo.com
	Mayo Consulting Services	Certified DBE	2342 Larkspur Lane Opelousas, LA 70570	St. Landry	337-678-1805 mayo9696@yahoo.com
	MFI Solutions	Certified DBE	2821 W. Gloria Switch Road Carencro, LA 70520	Lafayette	504-339-1894 josefbarnes85@outlook.com
517312	Wireless Telecommunications Carriers (except Satellite)				
	New Orleans Teleport Inc. DBA Causplus	Certified DBE	PO Box 51808 Lafayette, LA 70505	Lafayette	337-262-6080 customercare@callsplus.net

BIDDER/CONTRACTOR QUESTIONNAIRE

Company Name: _____

Contact Person: _____

Address: _____

Phone: _____ Fax: _____

Contract Title: _____

1. Did you subcontract with Small and Emerging Businesses (SEB)?
2. If you answer to question number one is yes, please list the SEB you intend to use and if applicable please rate their performance on this contract.

(Circle Which Applies)

_____ Excellent, Very Good, Good, Bad, Very Bad

_____ Excellent, Very Good, Good, Bad, Very Bad

_____ Excellent, Very Good, Good, Bad, Very Bad

_____ Excellent, Very Good, Good, Bad, Very Bad

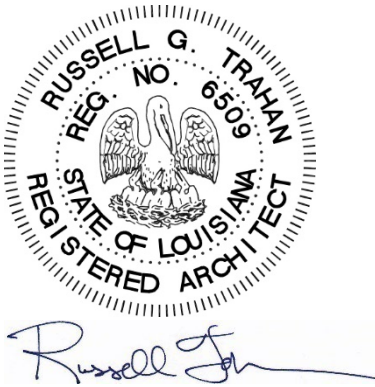
_____ Excellent, Very Good, Good, Bad, Very Bad

_____ Excellent, Very Good, Good, Bad, Very Bad

3. If your experience with using a SEB was bad or very bad, please explain

ARCHITECT SPECIFICATIONS INDEX:

The following specifications Divisions were prepared by and under the direct supervisions of the licensed Architect whose seal / stamp appears below:



SPECIFICATIONS GROUP

General Requirements Subgroup

DIVISION 01 - GENERAL REQUIREMENTS

011000	SUMMARY
012100	ALLOWANCES
012500	SUBSTITUTION PROCEDURES
013233	PHOTOGRAPHIC DOCUMENTATION
013300	SUBMITTAL PROCEDURES
014000	QUALITY REQUIREMENTS
014200	REFERENCES
016000	PRODUCT REQUIREMENTS
017300	EXECUTION
017329	CUTTING AND PATCHING
017700	CLOSEOUT PROCEDURES
017823	OPERATION AND MAINTENANCE DATA
017839	PROJECT RECORD DOCUMENTS

Facility Construction Subgroup

DIVISION 04 - MASONRY

042000 UNIT MASONRY

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

061053 MISCELLANEOUS ROUGH CARPENTRY

061600 SHEATHING

064116 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

071900 WATER REPELLENTS

072100 THERMAL INSULATION

072113 PERLITE LOOSE FILL

072119 FOAMED-IN-PLACE INSULATION

072726 FLUID-APPLIED MEMBRANE AIR BARRIERS

073113 ASPHALT SHINGLES

074113.16 STANDING-SEAM METAL ROOF PANELS

074213.13 FORMED METAL WALL PANELS

074293 SOFFIT PANELS

076200 SHEET METAL FLASHING AND TRIM

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DIVISION 08 - OPENINGS

081113 HOLLOW METAL DOORS AND FRAMES

081416 FLUSH WOOD DOORS

083613 SECTIONAL DOORS

084113 ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

087100 DOOR HARDWARE

088000 GLAZING

DIVISION 09 - FINISHES

092900 GYPSUM BOARD

095123 ACOUSTICAL TILE CEILINGS

096723 RESINOUS (EPOXY) FLOORING

DIVISION 10 - SPECIALTIES

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104416	FIRE EXTINGUISHERS
105031	METAL LOCKERS AND BENCHES
105126	PLASTIC LOCKERS
105300	ROD SUPPORTED EXTRUDED ALUMINUM CANOPY
107516	GROUND-SET FLAGPOLES

DIVISION 12 - FURNISHINGS

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DIVISION 32 – EXTERIOR IMPROVEMENTS

323129	WOOD FENCES AND GATES
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END OF TABLE OF CONTENTS

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Work covered by the Contract Documents.
 - 2. Work phases.
 - 3. Work under other contracts.
 - 4. Use of premises.
 - 5. Owner's occupancy requirements.
 - 6. Specification formats and conventions.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: **A New Facility for: FIRE STATION NO. 6**
 - 1. Project Location: 201 Camellia Blvd, Lafayette, Louisiana
- B. Owner: Lafayette Consolidated Government
 - 1. Owner's Representative: Dell Hebert
- C. Architect: Trahan Architecture + Planning, LLC
- D. The Work consists of the following:
 - 1. The work to be performed under the various bid items of this contract shall include all plant labor, supervision, materials, equipment, and incidentals which may be required for the construction and completion of the proposed work unless otherwise specified for a particular bid item.
 - 2. The scope of work for this contract includes but is not limited to the ground up construction of a new Fire Station #6 for the Lafayette Fire Department, which will include all services providing a fully functional fire station. Work shall include but is not limited to: A new Metal and CMU framed, Brick and Metal wall panel clad, metal roof truss, asphalt shingle roofed building. Exterior work includes landscaping, concrete paving, and lawn equipment shed. The building shall be equipped with a sprinkler system, fire alarm system, and a natural gas-powered electric generator.
- E. Project will be constructed under a single prime contract.

1.3 WORK UNDER OTHER CONTRACTS

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

1.4 USE OF PREMISES

- A. Use of Site: Limit use of premises to areas within the contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Limits: Confine constructions operations to area of work indicated in the drawings.
 - 2. Owner Occupancy: Allow for Owner occupancy of all areas surrounding Project site.
 - 3. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 - c. Protective measures and barriers shall be used to prevent school children and all persons from active school areas from accessing the construction and storage areas.
 - d. Operations of large equipment and construction vehicles shall be monitored by at least two individuals at all times to ensure safety as they are trafficking through and around the construction site.

1.5 OWNER'S OCCUPANCY REQUIREMENTS

- A. Owner Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed areas of building, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.
 - 1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied before Owner occupancy.
 - 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before Owner occupancy.
 - 3. Before partial Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of building.
 - 4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of building.

1.6 WORK RESTRICTIONS

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements governing the following:
 - 1. Quantity allowances.
- B. See Division 01 Section "Unit Prices" for procedures for using unit prices.
- C. See Division 01 Section "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.

1.2 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.3 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.4 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.5 QUANTITY ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

1.6 UNUSED MATERIALS

- A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Architect, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Architect, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 01: Include brick masonry as specified in Division 042010 Section "Unit Masonry- BRICK", allow \$650.00 per thousand brick (materials only).

END OF SECTION 012100

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use CSI Form 13.1A.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

- i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

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

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution will not adversely affect Contractor's construction schedule.

- c. Requested substitution has received necessary approvals of authorities having jurisdiction.
- d. Requested substitution is compatible with other portions of the Work.
- e. Requested substitution has been coordinated with other portions of the Work.
- f. Requested substitution provides specified warranty.
- g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Not allowed.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
- B. Related Requirements:
 - 1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.

1.2 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit unaltered, original, full-size image files within three days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
 - 2. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Date photograph was taken.
 - d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.3 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

1.4 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, with minimum size of 8 megapixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- D. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
 - 1. Flag construction limits before taking construction photographs.
 - 2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
 - 3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
- E. Periodic Construction Photographs: Take 20 photographs monthly, coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
 - 1. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
 - 2. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
 - 3. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

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

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Construction Manager.
 - e. Name of Contractor.
 - f. Name of subcontractor.
 - g. Name of supplier.
 - h. Name of manufacturer.
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
 4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
 5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return without review submittals received from sources other than Contractor.

- a. Transmittal Form for Paper Submittals: Use AIA Document G810 or CSI Form 12.1A.
- b. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
 - 1) Project name.
 - 2) Date.
 - 3) Destination (To:).
 - 4) Source (From:).
 - 5) Name and address of Architect.
 - 6) Name of Construction Manager.
 - 7) Name of Contractor.
 - 8) Name of firm or entity that prepared submittal.
 - 9) Names of subcontractor, manufacturer, and supplier.
 - 10) Category and type of submittal.
 - 11) Submittal purpose and description.
 - 12) Specification Section number and title.
 - 13) Specification paragraph number or drawing designation and generic name for each of multiple items.
 - 14) Drawing number and detail references, as appropriate.
 - 15) Indication of full or partial submittal.
 - 16) Transmittal number, numbered consecutively.
 - 17) Submittal and transmittal distribution record.
 - 18) Remarks.
 - 19) Signature of transmitter.

E. Options: Identify options requiring selection by Architect.

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

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

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

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

I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:

1. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will return two copies.
2. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect will not return copies.
3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

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

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm).
3. Submit Shop Drawings in the following format:
 - a. Three opaque copies of each submittal. Architect will retain 1 copies; remainder will be returned.

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

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
- D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 1. Submit product schedule in the following format:
 - a. Three paper copies of product schedule or list unless otherwise indicated. Architect will return two copies.
- E. Coordination Drawings Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."
- F. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
- G. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."
- H. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
- I. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- J. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."
- K. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- L. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

- M. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- N. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- O. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- P. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- Q. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- R. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- S. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
- T. Schedule of Tests and Inspections: Comply with requirements specified in Section 014000 "Quality Requirements."
- U. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- V. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- W. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- X. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

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

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. See Divisions 02 through 49 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- D. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- E. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- F. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name,

such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

- G. Experienced: When used with an entity, "experienced" means having successfully completed at least 3 previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Reports: Prepare and submit certified written reports that include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspecting.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee

payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.5 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.6 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 - 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

- a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least 72 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 6. Security and protection for samples and for testing and inspecting equipment at Project site.

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

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

1.7 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
 - 1. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 - 2. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 - 3. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 - 4. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 - 5. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.
- D. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the organizations responsible for the standards and regulations in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

PRIVATE tbl1

ADAAG	Americans with Disabilities Act (ADA) Architectural Barriers Act (ABA)
CFR	Code of Federal Regulations
DOD	Department of Defense Military Specifications and Standards
DSCC	Defense Supply Center Columbus (See FS)
FED-STD	Federal Standard (See FS)
FS	Federal Specification
FTMS	Federal Test Method Standard (See FS)
MIL	(See MILSPEC)
MIL-STD	(See MILSPEC)
MILSPEC	Military Specification and Standards
UFAS	Uniform Federal Accessibility Standards

1.3 ABBREVIATIONS AND ACRONYMS

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

PRIVATE tbl2

AA	Aluminum Association, Inc. (The)
AAADM	American Association of Automatic Door Manufacturers
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association

AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists (The)
ABAA	Air Barrier Association of America
ABMA	American Bearing Manufacturers Association
ACI	ACI International (American Concrete Institute)
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies, Inc. (The)
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America (The)
AHA	American Hardboard Association (Now part of CPA)
AHAM	Association of Home Appliance Manufacturers
AI	Asphalt Institute
AIA	American Institute of Architects (The)
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)
ALSC	American Lumber Standard Committee, Incorporated
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts, Inc.
APA	APA - The Engineered Wood Association
APA	Architectural Precast Association
API	American Petroleum Institute

ARI	Air-Conditioning & Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	ASME International
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International (American Society for Testing and Materials International)
AWCI	AWCI International (Association of the Wall and Ceiling Industry International)
AWCMA	American Window Covering Manufacturers Association (Now WCSC)
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
BICSI	BICSI
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International)
BISSC	Baking Industry Sanitation Standards Committee
CCC	Carpet Cushion Council
CDA	Copper Development Association
CEA	Canadian Electricity Association
CFFA	Chemical Fabrics & Film Association, Inc.
CGA	Compressed Gas Association
CIMA	Cellulose Insulation Manufacturers Association

CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CPA	Composite Panel Association
CPPA	Corrugated Polyethylene Pipe Association
CRI	Carpet & Rug Institute (The)
CRSI	Concrete Reinforcing Steel Institute
CSA	CSA International (Formerly: IAS - International Approval Services)
CSI	Cast Stone Institute
CSI	Construction Specifications Institute (The)
CSSB	Cedar Shake & Shingle Bureau
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute)
DHI	Door and Hardware Institute
EIA	Electronic Industries Alliance
EIMA	EIFS Industry Members Association
EJCDC	Engineers Joint Contract Documents Committee
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association
FIBA	Federation Internationale de Basketball Amateur (The International Basketball Federation)
FIVB	Federation Internationale de Volleyball (The International Volleyball Federation)
FMG	FM Global (Formerly: FM - Factory Mutual System)
FMRC	Factory Mutual Research (Now FMG)
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.
FSA	Fluid Sealing Association

FSC	Forest Stewardship Council
GA	Gypsum Association
GANA	Glass Association of North America
GRI	(Now GSI)
GS	Green Seal
GSI	Geosynthetic Institute
HI	Hydraulic Institute
HI	Hydronics Institute
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)
HPVA	Hardwood Plywood & Veneer Association
HPW	H. P. White Laboratory, Inc.
IAS	International Approval Services (Now CSA International)
IBF	International Badminton Federation
ICEA	Insulated Cable Engineers Association, Inc.
ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)
IESNA	Illuminating Engineering Society of North America
IENT	Institute of Environmental Sciences and Technology
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.
ISO	International Organization for Standardization
ISSFA	International Solid Surface Fabricators Association
ITS	Intertek
ITU	International Telecommunication Union

KCMA	Kitchen Cabinet Manufacturers Association
LMA	Laminating Materials Association (Now part of CPA)
LPI	Lightning Protection Institute
MBMA	Metal Building Manufacturers Association
MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association
MH	Material Handling (Now MHIA)
MHIA	Material Handling Industry of America
MIA	Marble Institute of America
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International (National Association of Corrosion Engineers International)
NADCA	National Air Duct Cleaners Association
NAGWS	National Association for Girls and Women in Sport
NAIMA	North American Insulation Manufacturers Association
NBGQA	National Building Granite Quarries Association, Inc.
NCAA	National Collegiate Athletic Association (The)
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCTA	National Cable & Telecommunications Association
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NeLMA	Northeastern Lumber Manufacturers' Association
NEMA	National Electrical Manufacturers Association

NETA	InterNational Electrical Testing Association
NFHS	National Federation of State High School Associations
NFPA	NFPA (National Fire Protection Association)
NFRC	National Fenestration Rating Council
NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association)
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)
NWWDA	National Wood Window and Door Association (Now WDMA)
OPL	Omega Point Laboratories, Inc. (Acquired by ITS - Intertek)
PCI	Precast/Prestressed Concrete Institute
PDCA	Painting & Decorating Contractors of America
PDI	Plumbing & Drainage Institute
PGI	PVC Geomembrane Institute
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America)
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections
RFCI	Resilient Floor Covering Institute

RIS	Redwood Inspection Service
RTI	(Formerly: NTRMA - National Tile Roofing Manufacturers Association) (Now TRI)
SAE	SAE International
SDI	Steel Deck Institute
SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SGCC	Safety Glazing Certification Council
SIA	Security Industry Association
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SMPTE	Society of Motion Picture and Television Engineers
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry
SSINA	Specialty Steel Industry of North America
SSPC	SSPC: The Society for Protective Coatings
STI	Steel Tank Institute
SWI	Steel Window Institute
SWRI	Sealant, Waterproofing, & Restoration Institute
TCA	Tile Council of America, Inc.
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance
TMS	The Masonry Society

TPI	Truss Plate Institute, Inc.
TPI	Turfgrass Producers International
TRI	Tile Roofing Institute (Formerly: RTI - Roof Tile Institute)
UL	Underwriters Laboratories Inc.
UNI	Uni-Bell PVC Pipe Association
USAV	USA Volleyball
USGBC	U.S. Green Building Council
USITT	United States Institute for Theatre Technology, Inc.
WASTEC	Waste Equipment Technology Association
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Window Covering Manufacturers Association (Now WCSC)
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association)
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association)
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California)
WIC	Woodwork Institute of California (Now WI)
WMMPA	Wood Moulding & Millwork Producers Association
WSRCA	Western States Roofing Contractors Association
WWPA	Western Wood Products Association

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

PRIVATE tbl3

BOCA	BOCA International, Inc. (See ICC)
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials (See ICC)
ICBO ES	ICBO Evaluation Service, Inc. (See ICC-ES)

ICC International Code Council

ICC-ES ICC Evaluation Service, Inc.

SBCCI Southern Building Code Congress International, Inc. (See ICC)

C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

PRIVATE tbl4

CE Army Corps of Engineers

CPSC Consumer Product Safety Commission

DOC Department of Commerce

DOD Department of Defense

DOE Department of Energy

EPA Environmental Protection Agency

FAA Federal Aviation Administration

FCC Federal Communications Commission

FDA Food and Drug Administration

GSA General Services Administration

HUD Department of Housing and Urban Development

LBL Lawrence Berkeley National Laboratory

NCHRP National Cooperative Highway Research Program (See TRB)

NIST National Institute of Standards and Technology

OSHA Occupational Safety & Health Administration

PBS Public Building Service (See GSA)

PHS Office of Public Health and Science

RUS Rural Utilities Service (See USDA)

SD State Department

TRB Transportation Research Board

USDA Department of Agriculture

USPS Postal Service

- D. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

PRIVATE tbl5

CBHF State of California, Department of Consumer Affairs
 Bureau of Home Furnishings and Thermal Insulation

CPUC California Public Utilities Commission

TFS Texas Forest Service
 Forest Resource Development

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. See Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
- C. See Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.2 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.3 SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use CSI Form 13.1A.
 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.
 - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
 3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Acceptance: Change Order.
 - b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.
- B. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable

product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

- a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
 - b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.
- C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

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

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
- 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
- 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Store cementitious products and materials on elevated platforms.
 - 5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 - 6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 7. Protect stored products from damage and liquids from freezing.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 - 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
 - 3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
 - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 - 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 - 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 - 4. Where products are accompanied by the term "as selected," Architect will make selection.
 - 5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 - 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
- B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
4. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
5. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
6. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
7. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
8. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
2. Requested substitution does not require extensive revisions to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.

2.3 COMPARABLE PRODUCTS

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

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

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. General installation of products.
 - 4. Progress cleaning.
 - 5. Starting and adjusting.
 - 6. Protection of installed construction.
 - 7. Correction of the Work.
- B. See Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.2 SUBMITTALS

- A. Certificates: Submit certificate signed by professional engineer certifying that location and elevation of improvements comply with requirements.
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- C. Certified Surveys: Submit 3 copies signed by professional engineer.
- D. Final Property Survey: Submit 3 copies showing the Work performed and record survey data.

1.3 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
 - 1. Before construction, verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a professional engineer to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
- C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

- D. Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by professional engineer, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
 - 1. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.9 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

SECTION 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. See Divisions 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
- C. See Division 07 Section "Penetration Firestopping" for patching fire-rated construction.

1.2 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
 - 6. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.3 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
 - 1. Neither the General Contractor nor the Contractor's Subs shall cut or patch any structural element without the approval of both the Architect and the Engineer. This includes, but is not limited to beams, columns, trusses, headers, strongbacks etc..
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 017329

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Warranties.
 - 3. Final cleaning.
- B. See Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
- C. See Division 01 Section "Photographic Documentation" for submitting Final Completion construction photographs and negatives.
- D. See Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
- E. See Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
- F. See Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
- G. See Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Advise Owner of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.

6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 8. Complete startup testing of systems.
 9. Submit test/adjust/balance records.
 10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 11. Advise Owner of changeover in heat and other utilities.
 12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 13. Complete final cleaning requirements, including touchup painting.
 14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
 2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report and warranty.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A.
 - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

1.5 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive **8-1/2-by-11-inch (215-by-280-mm)** paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - n. Replace parts subject to unusual operating conditions.

- o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - q. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
 - r. Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Emergency manuals.
 - 2. Operation manuals for systems, subsystems, and equipment.
 - 3. Maintenance manuals for the care and maintenance of products, materials, and finishes systems and equipment.
- B. See Divisions 02 through 49 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.2 SUBMITTALS

- A. Manual: Submit one copy of each manual in final form at least 15 days before final inspection. Architect will return copy with comments within 15 days after final inspection.
 - 1. Correct or modify each manual to comply with Architect's comments. Submit 3 copies of each corrected manual within 15 days of receipt of Architect's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain a title page, table of contents, and manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name, address, and telephone number of Contractor.
 - 6. Name and address of Architect.
 - 7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
 4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for type of emergency, emergency instructions, and emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component for fire flood water leak power failure water outage and equipment failure.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include instructions on stopping, shutdown instructions for each type of emergency, operating instructions for conditions outside normal operating limits, and required sequences for electric or electronic systems.

2.3 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and equipment descriptions, operating standards, operating procedures, operating logs, wiring and control diagrams, and license requirements.
- B. Descriptions: Include the following:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Equipment identification with serial number of each component.
 - 4. Equipment function.
 - 5. Operating characteristics.
 - 6. Limiting conditions.
 - 7. Performance curves.
 - 8. Engineering data and tests.
 - 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include start-up, break-in, and control procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; and required sequences for electric or electronic systems.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.4 PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material composition.
 - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and inspection procedures, types of cleaning agents, methods of cleaning, schedule for cleaning and maintenance, and repair instructions.

- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including maintenance instructions, drawings and diagrams for maintenance, nomenclature of parts and components, and recommended spare parts for each component part or piece of equipment:
- D. Maintenance Procedures: Include test and inspection instructions, troubleshooting guide, disassembly instructions, and adjusting instructions that detail essential maintenance procedures:
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original Project Record Documents as part of operation and maintenance manuals.
- F. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. See Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
- C. See Divisions 02 through 49 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.2 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit 1 set of marked-up Record Prints.
 - a. Final Submittal: Submit 1 set of marked-up Record Prints.
- B. Record Specifications: Submit 1 copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit 1 copy of each Product Data submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
 - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.

- b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 2. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Transparencies: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.
1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
 2. Refer instances of uncertainty to Architect for resolution.
 3. Owner will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. Note related Change Orders and Record Drawings where applicable.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 017839

SECTION 042010 - UNIT MASONRY - BRICK

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes unit masonry assemblies consisting of the following:
 - 1. Brick units: the Contractor shall provide for the brick, brick material cost only, listed in Section 012100 Allowances.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for each type and color of exposed masonry units and colored mortars.
- C. Material Certificates: For each type of product indicated. Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards.
 - 1. For masonry units include material test reports substantiating compliance with requirements.
- D. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1.3 PROJECT CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
- B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.

2. Products: Subject to compliance with requirements, provide one of the products specified.
3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 COLORS, TEXTURES, AND PATTERNS

- A. Masonry Units: As selected from manufacturer's full range.

2.3 BRICK

- A. General: Provide shapes indicated and as follows:
 1. Provide solid brick shapes for flooring. Provide manufacturer's full range of colors and shapes for Architect's selection.

2.4 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction.
 1. Available Products:
 - a. Capital Materials Corporation; Flamingo Color Masonry Cement.
 - b. Essroc, Italcementi Group;.
 - c. Holcim (US) Inc.;.
 - d. Lafarge North America Inc.;.
 - e. Lehigh Cement Company;.
 - f. National Cement Company, Inc.; Coosa Masonry Cement.
- B. Mortar Pigments: Iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortar.
 1. Available Products:
 - a. Bayer Corporation, Industrial Chemicals Div.; Bayferrox Iron Oxide Pigments.
 - b. Davis Colors; True Tone Mortar Colors.
 - c. Solomon Grind-Chem Services, Inc.; SGS Mortar Colors.
- C. Aggregate for Grout: ASTM C 404.
- D. Water: Potable.

2.5 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains from new masonry without damaging masonry. Use product approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.
 - 1. Available Manufacturers:
 - a. Diedrich Technologies, Inc.
 - b. EaCo Chem, Inc.
 - c. ProSoCo, Inc.

2.6 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
 - 2. Limit cementitious materials in mortar for exterior masonry to portland cement and lime.
- B. Mortar for Unit Masonry: Comply with ASTM C 270 , Proportion Specification.
 - 1. For mortar parge coats, use Type N.
 - 2. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.
- C. Grout for Unit Masonry: Comply with ASTM C 476.
 - 1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
 - 2. Provide grout with a slump of 8 to 11 inches (200 to 280 mm) as measured according to ASTM C 143/C 143M.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Use full-size units without cutting if possible. If cutting is required, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- B. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.
- C. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.
- D. Comply with tolerances in ACI 530.1/ASCE 6/TMS 602 and with the following:

1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.

3.2 MORTAR BEDDING AND JOINTING

- A. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- B. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.

3.3 CLEANING

- A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 1. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes.
 2. Protect adjacent surfaces from contact with cleaner.
 3. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
 4. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
 5. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

3.4 MASONRY WASTE DISPOSAL

- A. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
 1. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.
 2. Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 042000

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Framing with dimension lumber.
 - 2. Rooftop equipment bases and support curbs.
 - 3. Wood blocking and nailers.
 - 4. Wood furring.
 - 5. Wood sleepers.
 - 6. Interior wood trim.
 - 7. Wood shelving and clothes rods.
 - 8. Plywood backing panels.

1.2 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.
 - 1. Include data for wood-preservative and fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- B. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:
 - 1. Preservative-treated wood.
 - 2. Fire-retardant-treated wood.
 - 3. Power-driven fasteners.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
 - 3. Provide dressed lumber, S4S, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWPAC2, except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPAC31 with inorganic boron (SBX).
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
 - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - 2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
 - 3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
 - 4. Wood framing members that are less than 18 inches (460 mm) above the ground in crawl spaces or unexcavated areas.
 - 5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Comply with performance requirements in AWPAC27 (plywood).
 - 1. Use Interior Type A, unless otherwise indicated.
- B. Application: Treat items indicated on Drawings, and the following:
 - 1. Plywood backing panels (Telephone and electrical backer boards).

2.4 DIMENSION LUMBER FRAMING

- A. Maximum Moisture Content: 19 percent.
- B. Non-Load-Bearing Interior Partitions: Construction or No. 2 grade of any species.
- C. Other Framing: Construction or No. 2 grade and any of the following species:
 - 1. Southern pine; SPIB.
 - 2. Mixed southern pine; SPIB.
 - 3. Douglas fir-south; WWPAC.
 - 4. Hem-fir; WCLIB or WWPAC.
 - 5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPAC.

2.5 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Equipment bases and support curbs.
 - 4. Furring.
 - 5. Grounds.
 - 6. Utility shelving.
- B. For items of dimension lumber size, provide Construction or No. 2, Standard, Stud, or No. 3 grade lumber with 19 percent maximum moisture content of any species.
- C. For exposed boards, provide lumber with 15 percent maximum moisture content of eastern white pine, Idaho white, lodgepole, ponderosa, or sugar pine; Premium or 2 Common (Sterling) grade; NeLMA, NLGA, WCLIB, or WWPA.
- D. For concealed boards, provide lumber with 19 percent maximum moisture content and any of the following species and grades:
 - 1. Mixed southern pine, No. 2 or 3 grade; SPIB.
 - 2. Eastern softwoods, No. 2 or 3 Common grade; NELMA.
 - 3. Northern species, No. 2 or 3 Common grade; NLGA.

2.6 INTERIOR WOOD TRIM

- A. General: Provide kiln-dried finished (surfaced) material without finger-jointing, unless otherwise indicated.
- B. Hardwood Lumber Trim for Transparent (Stain or Clear) Finish: Clear red oak or white maple, selected for compatible grain and color.
- C. Lumber Trim for Opaque (Painted) Finish: Either finger-jointed or solid lumber, of one of the following species and grades:
 - 1. Grade D Select or Premium eastern white pine; NeLMA or NLGA.
- D. Moldings: Made to patterns included in WMMPA WM 7 and graded according to WMMPA WM 4.
 - 1. Moldings for Transparent (Stain or Clear) Finish: N-grade eastern white, Idaho white, lodgepole, ponderosa, alder, or sugar pine.
 - 2. Moldings for Opaque (Painted) Finish: P-grade eastern white, Idaho white, lodgepole, ponderosa, or sugar pine aspen, basswood, cottonwood, gum, magnolia, soft maple, tupelo, or yellow poplar primed medium-density fiberboard.

2.7 SHELVING AND CLOTHES RODS

- A. Shelving: Made from the following material, 3/4-inch (19-mm) thick.
 - 1. Wood boards of same species and grade indicated above for interior lumber trim for opaque finish.
- B. Shelf Cleats: 3/4-by-5-1/2-inch (19-by-140-mm) boards with hole and notch to receive clothes rods, of same species and grade indicated above for interior lumber trim for opaque finish.
- C. Clothes Rods: 1-1/2-inch- (38-mm-) diameter, clear, kiln-dried hardwood rods.

2.8 PLYWOOD BACKING PANELS

- A. Telephone and Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

2.9 FASTENERS

- A. General: Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or Type 304 stainless steel.
- B. Power-Driven Fasteners: NES NER-272.
- C. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Do not splice structural members between supports, unless otherwise indicated.
- D. Comply with AWWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- E. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.
 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
 3. Refer to the Structural drawings and specifications for additional requirements and fasteners.
- F. Wood Trim Installation: Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Cope at returns and miter at corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints.
1. Match color and grain pattern across joints.
 2. Install trim after gypsum board joint-finishing operations are completed.
 3. Install to tolerance of **1/8 inch in 96 inches (3 mm in 2438 mm)** for level and plumb. Install adjoining finish carpentry with **1/32-inch (0.8-mm)** maximum offset for flush installation and **1/16-inch (1.6-mm)** maximum offset for reveal installation.

3.2 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Wall sheathing.
 - 2. Roof sheathing.
 - 3. Underlayment.
 - 4. Sheathing joint and penetration treatment.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
 - 1. Fire-retardant-treated plywood.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance Ratings: As tested in accordance with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 FIRE-RETARDANT-TREATED PLYWOOD

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested in accordance with ASTM E84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.

1. Exterior Type: Treated materials are to comply with requirements specified above for fire-retardant-treated plywood by pressure process after being subjected to accelerated weathering in accordance with ASTM D2898. Use for exterior locations and where indicated.
- C. Kiln-dry material after treatment to a maximum moisture content of 15 percent.
- D. Identify fire-retardant-treated plywood with appropriate classification marking of qualified testing agency.
- E. Application: Treat all plywood unless otherwise indicated.

2.3 WALL SHEATHING

- A. Glass-Mat Gypsum Sheathing, Walls: ASTM C1177/C1177M.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. CertainTeed; SAINT-GOBAIN.
 - b. Gold Bond Building Products, LLC provided by National Gypsum Company.
 - c. USG Corporation.
 2. Type and Thickness: Type X, **5/8 inch (15.9 mm)** thick.

2.4 ROOF SHEATHING

- A. Plywood Sheathing, Roofs: , Exposure 1, Structural I sheathing.

2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 1. For roof and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M or of Type 304 stainless steel.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.

- C. Securely attach to substrate by fastening as indicated, complying with the following:
 - 1. Table 2304.10.1, "Fastening Schedule," in the ICC's International Building Code.
 - 2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in the ICC's International Residential Code for One- and Two-Family Dwellings.
 - 3. ICC-ES evaluation report for fastener.
- D. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- E. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

3.2 WOOD STRUCTURAL PANEL INSTALLATION

- A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.
- B. Fastening Methods: Fasten panels as indicated below:
 - 1. Wall and Roof Sheathing:
 - a. Screw to cold-formed metal framing.
 - b. Space panels **1/8 inch (3 mm)** apart at edges and ends.

3.3 GYPSUM SHEATHING INSTALLATION

- A. Comply with GA-253 and with manufacturer's written instructions.
 - 1. Fasten gypsum sheathing to cold-formed metal framing with screws.
 - 2. Install panels with a **3/8-inch (9.5-mm)** gap where non-load-bearing construction abuts structural elements.
 - 3. Install panels with a **1/4-inch (6.4-mm)** gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.
- B. Seal sheathing joints in accordance with sheathing manufacturer's written instructions.
 - 1. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing joints and apply and trowel sealant to embed entire face of tape in sealant. Apply sealant to exposed fasteners with a trowel so fasteners are completely covered. Seal other penetrations and openings.

END OF SECTION 061600

SECTION 064116 - PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Plastic-laminate-faced architectural cabinets.
2. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets that are not concealed within other construction.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.

B. Shop Drawings: For plastic-laminate-faced architectural cabinets.

1. Include plans, elevations, sections, and attachment details.

C. Samples: For each exposed product and for each color and texture specified.

1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.

PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of cabinets indicated for construction, finishes, installation, and other requirements.

B. Grade: Custom.

- C. Type of Construction: Frameless
- D. Door and Drawer-Front Style: Full Overlay.
- E. High-Pressure Decorative Laminate:
 - 1. refer to Section 060513 Decorative Plastic Laminate Finishes for selections
- F. Laminate Cladding for Exposed Surfaces:
 - 1. refer to Section 060513 Decorative Plastic Laminate Finishes for selections
- G. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces:
 - 1. refer to Section 060513 Decorative Plastic Laminate Finishes for selections
- H. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.
 - 1. Join subfronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners.

2.2 WOOD MATERIALS

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

2.3 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in Section 087100 "Door Hardware."
- B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, minimum 120 degrees of opening.
 - 1. Heavy Duty
 - 2. Three way adjustable, with screw.
 - 3. Full overlay application (frameless cabinetry)
 - 4. With Spring
 - 5. Nickel plated.
- C. Wire Pulls: Back mounted, solid metal, 4 inches (100 mm) long, 5/16 inch (8 mm) in diameter.
- D. Catches: Magnetic catches, BHMA A156.9, B03141.
- E. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.
- F. Shelf Rests: BHMA A156.9, B04013; metal.

- G. Drawer Slides: BHMA A156.9.
1. Grade 1 and Grade 2: Side mounted and extending under bottom edge of drawer.
 - a. Type: Full extension.
 - b. Material: Zinc-plated steel with polymer rollers.
 2. Grade 1HD-200: Side mounted; full-extension type; zinc-plated-steel ball-bearing slides.
 3. For drawers not more than **3 inches (75 mm)** high and not more than **24 inches (600 mm)** wide, provide Grade 1HD-200.
 4. For drawers more than **3 inches (75 mm)** high, but not more than **6 inches (150 mm)** high and not more than **24 inches (600 mm)** wide, provide Grade 1HD-200.
 5. For drawers more than **6 inches (150 mm)** high or more than **24 inches (600 mm)** wide, provide Grade 1HD-200.
 6. For computer keyboard shelves, provide Grade 1HD-200.
 7. For trash bins not more than **20 inches (500 mm)** high and **16 inches (400 mm)** wide, provide Grade 1HD-200.
- H. Slides for Sliding Glass Doors: BHMA A156.9, B07063; aluminum.
- I. Door Locks: BHMA A156.11, E07121.
- J. Drawer Locks: BHMA A156.11, E07041.
- K. Door and Drawer Silencers: BHMA A156.16, L03011.
- L. Grommets for Cable Passage: **2-inch (51-mm)** OD, molded-plastic grommets and matching plastic caps with slot for wire passage.
1. Color: to be selected by the Interior Designer from the MFG's full range of colors.
- M. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA, to be selected by the Architect from the following options:
1. Dark, Oxidized, Satin Bronze, Oil Rubbed: BHMA 613 for bronze base; BHMA 640 for steel base; match Architect's sample.
 2. Bright Brass, Clear Coated: BHMA 605 for brass base; BHMA 632 for steel base.
 3. Bright Brass, Vacuum Coated: BHMA 723 for brass base; BHMA 729 for zinc-coated-steel base.
 4. Satin Brass, Blackened, Bright Relieved, Clear Coated: BHMA 610 for brass base; BHMA 636 for steel base.
 5. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
 6. Bright Chromium Plated: BHMA 625 for brass or bronze base; BHMA 651 for steel base.
 7. Satin Stainless Steel: BHMA 630.
 8. Nickel-Plated
 9. Satin Finish, stainless steel
- N. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.4 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.
- C. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.
 - 1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

2.5 FABRICATION

- A. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
- B. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
- C. Install glass to comply with applicable requirements in Section 088000 "Glazing" and in GANA's "Glazing Manual."
 - 1. For glass in frames, secure glass with removable stops.
 - 2. For exposed glass edges, polish and grind smooth.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.
- B. Grade: Install cabinets to comply with quality standard grade of item to be installed.
- C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with wafer-head cabinet installation screws.
- D. Install cabinets level, plumb, and true in line to a tolerance of **1/8 inch in 96 inches (3 mm in 2400 mm)** using concealed shims.
 - 1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

2. Install cabinets without distortion so doors and drawers fit openings and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
3. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches (400 mm) o.c. with No. 10 wafer-head screws sized for not less than 1-1/2-inch (38-mm) penetration into wood framing, blocking, or hanging strips.

END OF SECTION 064116

SECTION 071900 - WATER REPELLENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes penetrating water-repellent treatments for the following vertical and horizontal surfaces:
 - 1. Concrete unit masonry.
 - 2. Clay brick masonry.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Product certificates.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: An employer of workers trained and approved by manufacturer.

PART 2 - PRODUCTS

2.1 PENETRATING WATER REPELLENTS

- A. Penetrating Silane/Siloxane-Blend Water Repellent: Clear, containing 12 percent or more active content of silane and siloxane blend with 600 g/L or less of VOCs.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Advanced Chemical Technologies, Inc.
 - b. Kryton International, Inc.
 - c. Laticrete International, Inc.
 - d. PROSOCO, Inc.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements and conditions affecting performance of the Work.
 - 1. Verify that surfaces are clean and dry in accordance with water-repellent manufacturer's requirements. Check moisture content in representative locations by method recommended by manufacturer.
 - 2. Verify that there is no efflorescence or other removable residues that would be trapped beneath the application of water repellent.
 - 3. Verify that required repairs are complete, cured, and dry before applying water repellent.
- B. Test pH level in accordance with water-repellent manufacturer's written instructions to ensure chemical bond to silica-containing or siliceous minerals.

3.2 PREPARATION

- A. New Construction and Repairs: Allow concrete and other cementitious materials to age before application of water repellent, in accordance with repellent manufacturer's written instructions.
- B. Cleaning: Before application of water repellent, clean substrate of substances that could impair penetration or performance of product in accordance with water-repellent manufacturer's written instructions[.]
- C. Coordination with Mortar Joints: Do not apply water repellent until pointing mortar for joints adjacent to surfaces receiving water-repellent treatment has been installed and cured.
- D. Coordination with Sealant Joints: Do not apply water repellent until sealants for joints adjacent to surfaces receiving water-repellent treatment have been installed and cured.
 - 1. Water-repellent work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, water repellent, and sealant materials identical to those required.

3.3 APPLICATION

- A. Apply coating of water repellent on surfaces to be treated using low-pressure spray to the point of saturation. Apply coating in dual passes of uniform, overlapping strokes. Remove excess material; do not allow material to puddle beyond saturation. Comply with manufacturer's written instructions for application procedure unless otherwise indicated.
- B. Apply a second saturation coating, repeating first application. Comply with manufacturer's written instructions for limitations on drying time between coats and after rainstorm wetting of surfaces between coats. Consult manufacturer's technical representative if written instructions are not applicable to Project conditions.

3.4 CLEANING

- A. Immediately clean water repellent from adjoining surfaces and surfaces soiled or damaged by water-repellent application as work progresses. Correct damage to work of other trades caused by water-repellent application.
- B. Comply with manufacturer's written cleaning instructions.

END OF SECTION 071900

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Glass-fiber blanket.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Research reports.

PART 2 - PRODUCTS

2.1 GLASS-FIBER BLANKET

- A. Glass-Fiber Blanket, Unfaced: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. CertainTeed Corporation.
 - b. Johns Manville; a Berkshire Hathaway company.
 - c. Knauf Insulation.
 - d. Owens Corning.

2.2 ACCESSORIES

- A. Insulation for Miscellaneous Voids:
 - 1. Glass-Fiber Insulation: ASTM C 764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E 84.
 - 2. Spray Polyurethane Foam Insulation: ASTM C 1029, Type II, closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.

- B. Insulation Anchors, Spindles, and Standoffs: As recommended by manufacturer.
- C. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide ventilation between insulated attic spaces and vented eaves.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.2 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

- A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
 - 1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
 - 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
 - 3. Maintain **3-inch (76-mm)** clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
 - 4. For wood-framed construction, install blankets according to ASTM C 1320 and as follows:
 - a. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.
- B. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
 - 1. Glass-Fiber Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately **2.5 lb/cu. ft. (40 kg/cu. m)**.
 - 2. Spray Polyurethane Insulation: Apply according to manufacturer's written instructions.

Part 1 - General

1.01 SCOPE

The work covered by this section of the specification includes supplying and installing loose-fill material for the thermal insulation of all masonry walls in accordance with these specifications and applicable drawings.

Part 2 - Products

2.01 MATERIALS

Perlite loose-fill insulation. Each package shall be clearly marked as such. The insulation material should conform to the requirements of ASTM Designations C549. Prior to installation of the insulation, the manufacturer should furnish a certificate to the architect or owner stating that the product conforms to the Standard Specifications for Loose-Fill Insulation as adopted and published by the Perlite Institute, Inc.

Part 3 - Execution

3.01 INSTALLTION

(a) The insulation must be installed in the following locations:

- In the cores of all exterior (and interior) hollow masonry units.

(b) The insulation shall be poured directly into the wall at any convenient internal. Wall sections under doors and windows shall be filled before sills are placed. Rodding or tamping is not necessary.

(c) All holes and opening in the wall through which insulation can escape shall be permanently sealed or caulked prior to installation of the insulation. Copper, galvanized steel, or fiberglass screening shall be used in all weep holes. (The inclusion of weep holes is considered good construction design practice to allow passage of any water that might penetrate the cavities or core spaces of wall construction.)

(d) Insulation must remain dry. Cavity caps or other suitable means should be used as the work progresses to insure that the insulation is protected from inclement weather.

SECTION 072119 - FOAMED-IN-PLACE INSULATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Open-cell spray polyurethane foam.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Research reports.

PART 2 - PRODUCTS

2.1 OPEN-CELL SPRAY POLYURETHANE FOAM

- A. Open-Cell Spray Polyurethane Foam: Spray-applied polyurethane foam using water as a blowing agent. Minimum density of **0.4 lb/cu. ft. (6.4 kg/cu. m)** and minimum aged R-value at **1-inch (25.4-mm)** thickness of **3.4 deg F x h x sq. ft./Btu at 75 deg F (24 K x sq. m/W at 24 deg C)**.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Carlisle Spray Foam Insulation.
 - b. Henry Company.
 - c. Johns Manville; a Berkshire Hathaway company.
 - 2. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - a. Flame-Spread Index: 25 or less.
 - b. Smoke-Developed Index: 450 or less.
 - 3. Fire Propagation Characteristics: Passes NFPA 285 and NFPA 276 testing as part of an approved assembly.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Spray insulation to envelop entire area to be insulated and fill voids.
- C. Apply in multiple passes to not exceed maximum thicknesses recommended by manufacturer. Do not spray into rising foam.

END OF SECTION 072119

SECTION 072726 - FLUID-APPLIED MEMBRANE AIR BARRIERS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Vapor-permeable, fluid-applied air barriers.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Product certificates.
- B. Product test reports.
- C. Field quality-control reports.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Air-Barrier Performance: Air-barrier assembly and seals with adjacent construction to be capable of performing as a continuous air barrier and as a liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration. Air-barrier assemblies to be capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, penetrations, and transitions at perimeter conditions without deterioration and air leakage exceeding specified limits.
- B. Air-Barrier Assembly Air Leakage: Maximum **0.04 cfm/sq. ft. of surface area at 1.57 lbf/sq. ft. (0.2 L/s x sq. m of surface area at 75 Pa)**, when tested in accordance with ASTM E2357.
- C. Air Permeance: Maximum **0.004 cfm/sq. ft. of surface area at 1.57 lbf/sq. ft. (0.02 L/s x sq. m of surface area at 75 Pa)** pressure difference; ASTM E2178.

- D. Adhesion to Substrate: Minimum 30 lbf/sq. in. (207 kPa) when tested in accordance with ASTM D4541.
- E. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.
- F. UV Resistance: Can be exposed to sunlight for 180 days in accordance with manufacturer's written instructions.

2.2 HIGH-BUILD AIR BARRIERS, VAPOR PERMEABLE

- A. High-Build, Vapor-Permeable Air Barrier Synthetic Polymer Type: Synthetic polymer membrane with an installed dry film thickness, according to manufacturer's written instructions, of 35 mils (0.9 mm) or thicker over smooth, void-free substrates.
 - 1. Available manufacturers, subject to compliance with the requirements, include but not limited to, the following:
 - a. GCP Applied Technologies
 - b. Carlisle Coatings & Waterproofing
 - c. DOW building Solutions
 - d. STO Corp
- B. Vapor Permeance: Minimum 5 perms (290 ng/Pa x s x sq. m); ASTM E96/E96M, Desiccant Method, Procedure A, Desiccant Method.

2.3 ACCESSORY MATERIALS

- A. Requirement: Provide primers, transition strips, termination strips, joint reinforcing fabric and strips, joint sealants, counterflashing strips, flashing sheets and metal termination bars, termination mastic, substrate patching materials, adhesives, tapes, foam sealants, lap sealants, and other accessory materials that are recommended in writing by air-barrier manufacturer to produce a complete air-barrier assembly and that are compatible with primary air-barrier material and adjacent construction to which they may seal.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

- A. Clean, prepare, treat, fill, and seal substrate and joints and cracks in substrate in accordance with manufacturer's written instructions and details. Provide clean, dust-free, and dry substrate for air-barrier application.
- B. Mask off adjoining surfaces not covered by air barrier to prevent spillage and overspray affecting other construction.
- C. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids in concrete with substrate-patching material.
- D. Remove excess mortar from masonry ties, shelf angles, and other obstructions.

- E. At changes in substrate plane, apply sealant or termination mastic beads at sharp corners and edges to form a smooth transition from one plane to another.
- F. Bridge isolation joints expansion joints and discontinuous wall-to-wall, deck-to-wall, and deck-to-deck joints with air-barrier accessory material that accommodates joint movement in accordance with manufacturer's written instructions and details.

3.2 INSTALLATION

- A. Install materials in accordance with air-barrier manufacturer's written instructions and details to form a seal with adjacent construction and ensure continuity of air and water barrier.
 - 1. Coordinate the installation of air barrier with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
 - 2. Install transition strip on roofing membrane or base flashing so that a minimum of **3 inches (75 mm)** of coverage is achieved over each substrate.
 - 3. Unless manufacturer recommends in writing against priming, apply primer to substrates at required rate and allow it to dry.
 - 4. Apply primer to substrates at required rate and allow it to dry. Limit priming to areas that will be covered by air-barrier material on same day. Reprime areas exposed for more than 24 hours.
- B. Connect and seal exterior wall air-barrier material continuously to roofing-membrane air barrier, concrete below-grade structures, floor-to-floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials.
- C. Wall Openings: Prime concealed, perimeter frame surfaces of windows, curtain walls, storefronts, and doors. Apply transition strip so that a minimum of **3 inches (75 mm)** of coverage is achieved over each substrate. Maintain **3 inches (75 mm)** of full contact over firm bearing to perimeter frames.
- D. Repair punctures, voids, and deficient lapped seams in strips and transition strips. Slit and flatten fishmouths and blisters. Patch with transition strips extending **6 inches (150 mm)** beyond repaired areas in strip direction.
- E. High-Build Air Barriers: Apply continuous unbroken air-barrier material to substrates according to the following thickness. Apply air-barrier material in full contact around protrusions such as masonry ties.
 - 1. Vapor-Permeable, High-Build Air Barrier: Total dry film thickness as recommended in writing by manufacturer to comply with performance requirements, but not less than **35 mils (0.9 mm)**, applied in two equal coats.
- F. Do not cover air barrier until it has been tested and inspected by testing agency.
- G. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air-barrier components.

3.3 FIELD QUALITY CONTROL

- A. Tests: As determined by testing agency from among the following tests:
 - 1. Air-barrier dry film thickness.
- B. Air barriers will be considered defective if they do not pass tests and inspections.
 - 1. Apply additional air-barrier material, in accordance with manufacturer's written instructions, where inspection results indicate insufficient thickness.
 - 2. Remove and replace deficient air-barrier components for retesting as specified above.
- C. Repair damage to air barriers caused by testing; follow manufacturer's written instructions.
- D. Prepare test and inspection reports.

3.4 CLEANING AND PROTECTION

- A. Protect air-barrier system from damage during application and remainder of construction period, in accordance with manufacturer's written instructions.
- B. Remove masking materials after installation.

END OF SECTION 072726

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Asphalt shingles.
2. Underlayment.
3. Metal flashing and trim.

B. Related Requirements:

1. Section 077200 "Roof Accessories" for ridge vents.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- B. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

- A. Product test reports.

- B. Evaluation reports.

- C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace asphalt shingles that fail within specified warranty period.
 - 1. Material Warranty Period: 40 years from date of Substantial Completion, prorated, with first 10 years nonprorated.
 - 2. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds of up to 135 mph (60 m/s) for five years from date of Substantial Completion.
 - 3. Algae-Resistance Warranty Period: Asphalt shingles will not discolor for 10 years from date of Substantial Completion.
 - 4. Workmanship Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Exterior Fire-Test Exposure: Provide asphalt shingles and related roofing materials identical to those of assemblies tested for Class A fire resistance according to ASTM E 108 or UL 790 by Underwriters Laboratories, Inc. or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.

2.2 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

- A. Laminated-Strip Asphalt Shingles: ASTM D 3462/D 3462M, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. GAF.
 - b. Owens Corning.
 - c. CertainTeed Corporation
 - 2. Butt Edge: Straight cut.
 - 3. Strip Size: Manufacturer's standard.
 - 4. Algae Resistance: Granules resist algae discoloration.
 - 5. Impact Resistance: UL 2218, Class 4.
 - 6. Color and Blends: As selected by Architect from manufacturer's full range.

2.3 UNDERLAYMENT MATERIALS

- A. Synthetic Underlayment: UV-resistant polypropylene, polyolefin, or polyethylene polymer fabric with surface coatings or treatments to improve traction underfoot and abrasion resistance;

evaluated and documented to be suitable for use as a roof underlayment under applicable codes by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. CertainTeed Corporation.
 - b. Owens Corning.
 - c. CertainTeed Corporation

2.4 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.
- B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum ~~0.120-inch-~~ (3-mm-) diameter, sharp-pointed, with a minimum ~~3/8-inch-~~ (9.5-mm-) diameter flat head and of sufficient length to penetrate ~~3/4 inch~~ (19 mm) into solid wood decking or extend at least ~~1/8 inch~~ (3 mm) through OSB or plywood sheathing.
 1. Shank: Barbed.
 2. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
- C. Felt-Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel wire with low-profile capped heads or disc caps, ~~1-inch~~ (25-mm) minimum diameter.
- D. Synthetic-Underlayment Fasteners: As recommended in writing by synthetic-underlayment manufacturer for application indicated.

2.5 METAL FLASHING AND TRIM

- A. General: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
 1. Sheet Metal:
 - a. Exposed: Aluminum, Prefinished
 - b. Concealed: Aluminum, Mill finish
- B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of the item.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

- A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.

- B. Synthetic Underlayment: Install on roof deck parallel with and starting at the eaves. Lap sides and ends and treat laps as recommended in writing by manufacturer. Stagger end laps between succeeding courses at interval recommended in writing by manufacturer. Fasten according to manufacturer's written instructions. Cover underlayment within period recommended in writing by manufacturer.
 - 1. Install in single layer on roofs sloped at 4:12 and greater.
 - 2. Install in double layer on roofs sloped at less than 4:12.

3.2 METAL FLASHING INSTALLATION

- A. General: Install metal flashings and other sheet metal to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
 - 1. Install metal flashings according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."

3.3 ASPHALT-SHINGLE INSTALLATION

- A. General: Install asphalt shingles according to manufacturer's written instructions, recommendations in ARMA's "Residential Asphalt Roofing Manual," and recommendations in NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."
- B. Install starter strip along lowest roof edge, consisting of an asphalt-shingle strip at least 7 inches (175 mm) wide with self-sealing strip face up at roof edge.
 - 1. Extend asphalt shingles 1/2 inch (13 mm) over fasciae at eaves and rakes.
 - 2. Install starter strip along rake edge.
- C. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- D. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- E. Install asphalt shingles by single-strip column or racking method, maintaining uniform exposure. Install full-length first course followed by cut second course, repeating alternating pattern in succeeding courses.
- F. Fasten asphalt-shingle strips with a minimum of five roofing nails located according to manufacturer's written instructions.
 - 1. Where roof slope exceeds 21:12, seal asphalt shingles with asphalt roofing cement spots after fastening with additional roofing nails.
 - 2. Where roof slope is less than 4:12, seal asphalt shingles with asphalt roofing cement spots.

3. When ambient temperature during installation is below 50 deg F (10 deg C), seal asphalt shingles with asphalt roofing cement spots.
- G. Closed-Cut Valleys: Extend asphalt-shingle strips from one side of valley 12 inches (300 mm) beyond center of valley. Use one-piece shingle strips without joints in valley. Fasten with extra nail in upper end of shingle. Install asphalt-shingle courses from other side of valley and cut back to a straight line 2 inches (50 mm) short of valley centerline. Trim upper concealed corners of cut-back shingle strips.
1. Do not nail asphalt shingles within 6 inches (150 mm) of valley center.
 2. Set trimmed, concealed-corner asphalt shingles in a 3-inch- (75-mm-) wide bed of asphalt roofing cement.
- H. Hip and Ridge Shingles: Maintain same exposure of cap shingles as roofing shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds. Fasten with roofing nails of sufficient length to penetrate sheathing.
1. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

END OF SECTION 073113

SECTION 074113.16 - STANDING-SEAM METAL ROOF PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Standing-seam metal roof panels.

1.2 PREINSTALLATION MEETINGS

- ##### A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- ##### A. Product Data: For each type of product.

- ##### B. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.

- ##### C. Samples: For each type of metal panel indicated.

1.4 INFORMATIONAL SUBMITTALS

- ##### A. Product test reports.

- ##### B. Warranties: Sample of special warranties.

1.5 CLOSEOUT SUBMITTALS

- ##### A. Maintenance data.

1.6 QUALITY ASSURANCE

- ##### A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

- ##### B. UL-Certified, Portable Roll-Forming Equipment: UL-certified, portable roll-forming equipment capable of producing metal panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of work.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Twenty (20) years from date of Substantial Completion.
- B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Finish Warranty Period: 30 years from date of Substantial Completion.
 - 2. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:
 - 1. Wind Loads: As indicated on Drawings.
 - 2. Other Design Loads: As indicated on Drawings.
- B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E1680.
- C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E1646.
- D. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
 - 1. Uplift Rating: UL 90.
- E. Hail Resistance: Class 4
- F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 STANDING-SEAM METAL ROOF PANELS

- A. Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.
 - 1. Steel Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E1514.
 - 2. Aluminum Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E1637.
- B. **Basis of Design Product: Subject to compliance with requirements provide McElroy Metal Maxima**
 - 1. Substitution Limitations:
 - a. Requests for approval must be submitted in writing at least ten (10) days prior to bid date, and are accompanied by all related test reports and design calculations listed in section 1.4 and Design and Performance criteria Section 2.2.
 - b. Substitute manufacturers will be approved by written addendum to all bidders. Voluntary alternates will not be considered. Substitutions will not be permitted after the bid date of this project.
 - c. Roof panels proposed for substitution shall fully comply with specified requirements in appearance, assembly, and performance.
- C. McElroy Metal Maxima Panels:
 - 1. Profile: Vertical leg standing seam panel with male/female seam to be mechanically interlocked at jobsite with mechanical seamer specifically designed for Maxima profile.
 - 2. Specifier Note: Edit paragraph below. 16" (406 mm) panel is inventoried; other widths are optional.
 - 3. Size: 2" high seam by 12" width, Length as indicated on drawings.
 - 4. Panel Surface: 2": Striated
 - 5. Material: Galvalume steel sheet conforming to ASTM A792, AZ50 coating for bare; AZ50 coating for painted; 24 gauge sheet thickness.
 - 6. Panels should be factory formed for lengths below 50'. To avoid lap conditions for panels greater than 50', panels should be produced on site but production must be completed by factory technicians.
 - 7. Color: As selected by Architect from manufacturer's full range.
- D. Panel Clips: ASTM A 653/A 653M, G90 (Z180) hot-dip galvanized zinc coating, configured for concealment in panel joints, and identical to clips utilized in tests demonstrating compliance with performance requirements.
- E. Panel Fasteners: Self-tapping screws and other acceptable corrosion-resistant fasteners recommended by roof panel manufacturer. Where exposed fasteners cannot be avoided, supply fasteners with EPDM or neoprene gaskets, with heads matching color of metal panels by means of factory-applied coating.
- F. Joint Sealers: Manufacturer's standard or recommended liquid and preformed sealers and tapes, and as follows:
 - 1. Factory-Applied Seam Sealant: Manufacturer's standard hot-melt type.
 - 2. Tape Sealers: Manufacturer's standard non-curing butyl tape, AAMA 809.2.

3. Concealed Joint Sealant: Non-curing butyl, AAMA 809.2.
- G. Steel Sheet Miscellaneous Framing Components: ASTM C 645, with ASTM A 653/A 653M, **G60 (Z180)** hot-dip galvanized zinc coating.
 - H. Roof Accessories: Approved by metal roof panel manufacturer. Refer to [Section 07 72 00] "Roof Accessories" for requirements for roof accessories.
 - I. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of **30 mils (0.76 mm)** thick, consisting of slip-resistant, polyethylene-film top surface laminated to a layer of butyl or SBS-modified asphalt adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.
 1. Thermal Stability: Stable after testing at **240 deg F (116 deg C)**; ASTM D1970.
 2. Low-Temperature Flexibility: Passes after testing at minus **20 deg F (29 deg C)**; ASTM D1970.
 3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ATAS International, Inc.
 - b. Carlisle WIP Products; a brand of Carlisle Construction Materials.
 - c. Owens Corning.
 - d. Polyglass U.S.A., Inc.

2.3 MISCELLANEOUS MATERIALS

- A. Miscellaneous Metal Subframing and Furring: ASTM C645; cold-formed, metallic-coated steel sheet, ASTM A653/A653M, **G90 (Z275 hot-dip galvanized)** coating designation or ASTM A792/A792M, **Class AZ50 (Class AZM150)** coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.
- B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
 1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
 2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
 3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum **1-inch- (25-mm-)** thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
- C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

- D. Gutters and Downspouts: Formed from same material as roof panels according to SMACNA's "Architectural Sheet Metal Manual." Finish to match metal roof panels.
- E. Panel Fasteners: Self-tapping screws designed to withstand design loads.
- F. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
 - 1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
 - 2. Joint Sealant: ASTM C920; as recommended in writing by metal panel manufacturer.
 - 3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.4 FABRICATION

- A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.
- C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
- D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

2.5 FINISHES

- A. Panels and Accessories:
 - 1. Kynar 500 (PVDF)
 - 2. Two-Coat Fluoropolymer: Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat.
 - 3. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.

3.2 INSTALLATION OF STANDING SEAM METAL ROOF PANELS

- A. Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.
 - 1. Install clips to supports with self-tapping fasteners.
 - 2. Install pressure plates at locations indicated in manufacturer's written installation instructions.
 - 3. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.
 - 4. Watertight Installation:
 - a. Apply a continuous ribbon of sealant or tape to seal joints of metal panels, using sealant or tape as recommend in writing by manufacturer as needed to make panels watertight.
 - b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
 - c. At panel splices, nest panels with minimum 6-inch (152-mm) end lap, sealed with sealant and fastened together by interlocking clamping plates.
- B. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
- C. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

3.3 CLEANING AND PROTECTION

- A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

END OF SECTION 074113.16

SECTION 074213.13 - FORMED METAL WALL PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Exposed-fastener, lap-seam metal wall panels.
2. Concealed-fastener, lap-seam metal wall panels.
3. Metal liner panels.

1.2 PREINSTALLATION MEETINGS

- ##### A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- ##### A. Product Data: For each type of product.
- ##### B. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
- ##### C. Samples: For each type of metal panel indicated.

1.4 INFORMATIONAL SUBMITTALS

- ##### A. Product test reports.
- ##### B. Warranties: Samples of special warranties.

1.5 CLOSEOUT SUBMITTALS

- ##### A. Maintenance data.

1.6 QUALITY ASSURANCE

- ##### A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- ##### B. UL-Certified, Portable Roll-Forming Equipment: UL-certified, portable roll-forming equipment capable of producing metal panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of work.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: 20 years from date of Substantial Completion.
- B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:
 - 1. Wind Loads: As indicated on Drawings.
 - 2. Other Design Loads: As indicated on Drawings.
 - 3. Deflection Limits: For wind loads, no greater than as indicated on Drawings of the span.
- B. Air Infiltration: Air leakage of not more than **0.06 cfm/sq. ft. (0.3 L/s per sq. m)** when tested according to ASTM E283 at the following test-pressure difference:
 - 1. Test-Pressure Difference: **6.24 lbf/sq. ft. (300 Pa)**.
- C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E331 at the following test-pressure difference:
 - 1. Test-Pressure Difference: **6.24 lbf/sq. ft. (300 Pa)**.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): **120 deg F (67 deg C)**, ambient; **180 deg F (100 deg C)**, material surfaces.
- E. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 EXPOSED-FASTENER, LAP-SEAM METAL WALL PANELS

- A. Provide factory-formed metal panels designed to be field assembled by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps. Include accessories required for weathertight installation.
- B. Corrugated-Profile, Exposed-Fastener Metal Wall Panels, Basis of Design:.
 - 1. McElroy Mega-Rib Panel, 24 ga, Kynar 500 PVDF, Fluoropolymer, Two Coat finish, exposed fastener wall panels.
 - a. Nominal Thickness: 24 ga..
 - b. Exterior Finish: Two-coat fluoropolymer.
 - c. Color: As selected by Architect from manufacturer's full range.
 - 2. Aluminum Sheet: Coil-coated sheet, **ASTM B209** (**ASTM B209M**), alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.
 - a. Thickness: 24 ga. minimum.
 - b. Surface: Smooth, flat finish.
 - c. Exterior Finish: Two-coat fluoropolymer.
 - d. Color: As selected by Architect from manufacturer's full range.
 - 3. Panel Coverage: 36 inches.
 - 4. Panel Height: 1 ½”.

2.3 MISCELLANEOUS MATERIALS

- A. Miscellaneous Metal Subframing and Furring: ASTM C645, cold-formed, metallic-coated steel sheet, ASTM A653/A653M, **G90** (**Z275**) hot-dip galvanized coating designation or ASTM A792/A792M, **Class AZ50** (**Class AZM150**) aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel system.
- B. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
 - 1. Closures: Provide closures at eaves and rakes, fabricated of same metal as metal panels.
 - 2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
 - 3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum **1-inch-** (**25-mm-**) thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
- C. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, endwalls, framed openings, rakes, fasciae,

parapet caps, soffits, reveals, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.

- D. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.
- E. Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
 - 1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
 - 2. Joint Sealant: ASTM C920; as recommended in writing by metal panel manufacturer.
 - 3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.4 FABRICATION

- A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.
- C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
- D. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.
- E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

2.5 FINISHES

- A. Panels and Accessories:
 - 1. Two-Coat Fluoropolymer: . Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat.
 - 2. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.

3.2 INSTALLATION

- A. Lap-Seam Metal Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.
 - 1. Lap ribbed or fluted sheets one full rib. Apply panels and associated items true to line for neat and weathertight enclosure.
 - 2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal panels.
 - 3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
 - 4. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
 - 5. Flash and seal panels with weather closures at perimeter of all openings.
- B. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
- C. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

3.3 CLEANING

- A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

END OF SECTION 074213.13

SECTION 074293 - SOFFIT PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal soffit panels (includes exterior porch ceilings)

1.2 PREINSTALLATION MEETINGS

- ##### A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- ##### A. Product Data: For each type of product.

- ##### B. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.

- ##### C. Samples: For each type of metal panel indicated.

1.4 INFORMATIONAL SUBMITTALS

- ##### A. Product test reports.

- ##### B. Warranties: Samples of special warranties.

1.5 CLOSEOUT SUBMITTALS

- ##### A. Maintenance data.

1.6 WARRANTY

- ##### A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 20 years from date of Substantial Completion.

- B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E1592:
1. Wind Loads: As indicated on Drawings.
 2. Other Design Loads: As indicated on Drawings.
 3. Deflection Limits: For wind loads, no greater than as indicated on Drawings of the span.
- B. Air Infiltration: Air leakage of not more than **0.06 cfm/sq. ft. (0.3 L/s per sq. m)** when tested according to ASTM E283 at the following test-pressure difference:
1. Test-Pressure Difference: **6.24 lbf/sq. ft. (300 Pa)**.
- C. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E331 at the following test-pressure difference:
1. Test-Pressure Difference: **6.24 lbf/sq. ft. (300 Pa)**.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): **120 deg F (67 deg C)**, ambient; **180 deg F (100 deg C)**, material surfaces.

2.2 METAL SOFFIT PANELS

- A. Provide metal soffit panels designed to be installed by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners in side laps. Include accessories required for weathertight installation.
- B. Metal Soffit Panels: Basis of design: McElroy Metal, Marquee-Lok Ribs, 12" wide, non-vented, double pencil rib, 22 ga, min. two coat Kynar 500 finish, standard 22 ga galvalume substrate.
1. Finish: to be selected by the Architect from the Manufacturers full line of standard colors.
 2. Sealant: Factory applied within interlocking joint.

2.3 MISCELLANEOUS MATERIALS

- A. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
 - 1. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum ~~1-inch-~~ (25-mm-) thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
- B. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Finish flashing and trim with same finish system as adjacent metal panels.
- C. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.
- D. Panel Sealants: Provide sealant types recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
 - 1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; ~~1/8 inch~~ (3 mm) thick.
 - 2. Joint Sealant: ASTM C920; as recommended in writing by metal panel manufacturer.
 - 3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.4 FABRICATION

- A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. Contractor may chose On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.
- C. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
- D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

2.5 FINISHES

A. Panels and Accessories:

1. Two-Coat Fluoropolymer: Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
2. Concealed Finish: White or light-colored acrylic or polyester backer finish.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal panel manufacturer's written recommendations.
1. Soffit Framing: fasten furring channels to supports, as required to comply with requirements for assemblies indicated.

3.2 INSTALLATION

- A. Metal Soffit Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.
1. Apply panels and associated items true to line for neat and weathertight enclosure.
 2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal panels.
 3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
 4. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
- B. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
- C. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

3.3 CLEANING

- A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

END OF SECTION 074293

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Manufactured reglets with counterflashing.
2. Formed roof-drainage sheet metal fabrications.
3. Formed steep-slope roof sheet metal fabrications.
4. Formed wall sheet metal fabrications.

1.2 PREINSTALLATION MEETINGS

- ##### A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- ##### A. Product Data: For each type of product.

- ##### B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.
2. Distinguish between shop- and field-assembled work.
3. Include identification of finish for each item.
4. Include pattern of seams and details of termination points, expansion joints and expansion-joint covers, direction of expansion, roof-penetration flashing, and connections to adjoining work.

- ##### C. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

- ##### A. Product certificates.

- ##### B. Product test reports.

- ##### C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

- ##### A. Maintenance data.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
 - 1. For copings and roof edge flashings that are SPRI ES-1 tested, shop shall be listed as able to fabricate required details as tested and approved.
- B. Mockups: Build mockups to verify selections made under Sample submittals to demonstrate aesthetic effects and to set quality standards for fabrication and installation.
 - 1. Build mockup of typical roof edge eave, including fascia fascia trim and gutter profile, approximately 12" minimum long.

1.7 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. SPRI Wind Design Standard: Manufacture and install copings roof edge flashings tested according to SPRI ES-1 and capable of resisting the following design pressure:
 - 1. Design Pressure: As indicated on Drawings.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
 - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Metallic-Coated Steel Sheet: Provide aluminum-zinc alloy-coated steel sheet according to ASTM A 792/A 792M, **Class AZ50 (Class AZM150)** coating designation, **Grade 40 (Grade 275)**; prepainted by coil-coating process to comply with ASTM A 755/A 755M.
 - 1. Exposed Coil-Coated Finish:
 - a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 2. Color: As selected by Architect from manufacturer's full range.

2.3 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet: Minimum **30 mils (0.76 mm)** thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer. (Provide granular surface or Red Rosin slip sheet where required by roofing manufacturer)
 - 1. **Manufacturers:** Subject to compliance with requirements, provide products by the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Carlisle Coatings & Waterproofing Inc.
 - b. Carlisle WIP Products; a brand of Carlisle Construction Materials.
 - c. Owens Corning.
 - 2. Thermal Stability: ASTM D 1970; stable after testing at **240 deg F (116 deg C)** or higher.
 - 3. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus **20 deg F (29 deg C)** or lower.

2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
 - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
 2. Fasteners for Aluminum-Zinc Alloy-Coated Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape **1/2 inch (13 mm)** wide and **1/8 inch (3 mm)** thick.
- D. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- G. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.
- H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.5 MANUFACTURED REGLETS

- A. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with interlocking counterflashing on exterior face, of same metal as reglet.
1. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
 - a. Fry Reglet Corporation.
 - b. Heckmann Building Products, Inc.
 - c. Keystone Flashing Company, Inc.
 2. Material: Aluminum, **0.024 inch (0.61 mm)** thick.
 3. Finish: Mill With manufacturer's standard color coating.

2.6 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 - 1. Obtain field measurements for accurate fit before shop fabrication.
 - 2. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 - 3. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
 - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
 - 2. Use lapped expansion joints only where indicated on Drawings.
- C. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.
- D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- E. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.
- F. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- G. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.
- H. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.

2.7 ROOF-DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- (2400-mm-) long sections. Furnish flat-stock gutter brackets and gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters. Shop fabricate interior and exterior corners.
- B. Downspouts: Fabricate Round downspouts to dimensions indicated, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors.

1. Hanger Style: .
 2. Fabricate from the following materials:
 - a. Aluminum: 0.024 inch (0.61 mm) thick.
- C. Downspout Boots: Fabricate to dimensions and shape required and from the following materials:
1. Manufacturer: Provide Aluminum Downspout boot from Kinetic Architectural products (basis of design) or approved manufacturer.
 - a. Aluminum: 1/8" thick, fully welded joints.
 - b. Architect shall select color from full line of Manufacturer's standard Powder coated finishes.
 - c. Provide shop fabricated base offset to and end to reach out to and connect to subsurface drain inlets.

2.8 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
1. Aluminum-Zinc Alloy-Coated Steel: 24 gauge thick.
- B. Drip Edges: Fabricate from the following materials:
1. Aluminum-Zinc Alloy-Coated Steel: 24 gauge thick unless indicated in the drawings.
- C. Eave, Rake Flashing: Fabricate from the following materials:
1. Aluminum-Zinc Alloy-Coated Steel: 24 gauge thick unless indicated in the drawings.

2.9 WALL SHEET METAL FABRICATIONS

- A. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inch- (2400-mm-) long, but not exceeding 12-foot- (3.6-m-) long, sections, under copings, and at shelf angles. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches (150 mm) beyond each side of wall openings; and form with 2-inch- (50-mm-) high, end dams. Fabricate from the following materials:
- a. Prefinished Aluminum: 0.036 inch (20 ga) thick.
- B. Opening Flashings in Frame Construction: Fabricate head, sill, and similar flashings to extend 4 inches (100 mm) beyond wall openings. Form head and sill flashing with 2-inch- (50-mm-) high, end dams. Fabricate from the following materials:
- a. Prefinished Aluminum: 0.036 inch (20 ga) thick.

PART 3 - EXECUTION

3.1 UNDERLAYMENT INSTALLATION

- A. Synthetic Underlayment: Install synthetic underlayment, wrinkle free, according to manufacturers' written instructions, and using adhesive where possible to minimize use of mechanical fasteners under sheet metal.

- B. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps and edges with roller. Cover underlayment within 14 days.

3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 3. Space cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
 4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
 5. Torch cutting of sheet metal flashing and trim is not permitted.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
1. Coat concealed side of uncoated-aluminum sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.
1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
 2. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- G. Rivets: Rivet joints in uncoated aluminum where necessary for strength.

3.3 ROOF-DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Hanging Gutters: Join sections with joints sealed with sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.
 - 1. Install gutter with expansion joints at locations indicated, but not exceeding, **50 feet (15.24 m)** apart. Install expansion-joint caps.
- C. Downspouts: Join sections with **1-1/2-inch (38-mm)** telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately **60 inches (1500 mm)** o.c.
- D. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints minimum of **4 inches (100 mm)** in direction of water flow.

3.4 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate.
- C. Copings: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated.
- D. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of **4 inches (100 mm)** over base flashing. Install stainless-steel draw band and tighten.
- E. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend

counterflashing 4 inches (100 mm) over base flashing. Lap counterflashing joints minimum of 4 inches (100 mm).

- F. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with [elastomeric] [butyl] sealant and clamp flashing to pipes that penetrate roof.

3.5 WALL FLASHING INSTALLATION

- A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.
- B. Through-Wall Flashing: Installation of through-wall flashing is specified in Section 042000 "Unit Masonry."
- C. Opening Flashings in Frame Construction: Install continuous head, sill, and similar flashings to extend 4 inches (100 mm) beyond wall openings.

3.6 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.
- D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.

END OF SECTION 076200

SECTION 078413 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes through-penetration firestop systems for penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items.

1.2 PERFORMANCE REQUIREMENTS

- A. General: For penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated.
- B. Rated Systems: Provide through-penetration firestop systems with the following ratings determined per ASTM E 814:
- C. For through-penetration firestop systems exposed to view, traffic, moisture, and physical damage, provide products that, after curing, do not deteriorate when exposed to these conditions both during and after construction.
 - 1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.
 - 2. For floor penetrations with annular spaces exceeding 4 inches (100 mm) in width and exposed to possible loading and traffic, provide firestop systems capable of supporting floor loads involved, either by installing floor plates or by other means.
 - 3. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.
- D. For through-penetration firestop systems exposed to view, provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each through-penetration firestop system, submit documentation, including illustrations, from a qualified testing and inspecting agency, showing each type of construction condition penetrated, relationships to adjoining construction, and type of penetrating item.

1.4 QUALITY ASSURANCE

- A. Installation Responsibility: Assign installation of through-penetration firestop systems and fire-resistive joint systems in Project to a single qualified installer.
- B. Fire-Test-Response Characteristics: Provide through-penetration firestop systems that comply with the following requirements and those specified in Part 1 "Performance Requirements" Article:
 - 1. Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL, or another agency performing testing and follow-up inspection services for firestop systems acceptable to authorities having jurisdiction.
- C. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.
- D. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until each installation has been examined by building inspector, if required by authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, through-penetration firestop systems that may be incorporated into the Work include, but are not limited to, those systems indicated on Drawings, that are produced by one of the following manufacturers:
 - 1. A/D Fire Protection Systems Inc.
 - 2. Grace, W. R. & Co. - Conn.
 - 3. Hilti, Inc.
 - 4. Johns Manville.
 - 5. Nelson Firestop Products.
 - 6. NUCO Inc.
 - 7. RectorSeal Corporation (The).
 - 8. Specified Technologies Inc.
 - 9. 3M; Fire Protection Products Division.
 - 10. Tremco; Sealant/Weatherproofing Division.
 - 11. USG Corporation.

2.2 FIRESTOPPING

- A. Compatibility: Provide through-penetration firestop systems that are compatible with one another; with the substrates forming openings; and with the items, if any, penetrating through-penetration firestop systems, under conditions of service and application, as demonstrated by through-penetration firestop system manufacturer based on testing and field experience.

- B. Accessories: Provide components for each through-penetration firestop system that are needed to install fill materials and to comply with Part 1 "Performance Requirements" Article. Use only components specified by through-penetration firestop system manufacturer and approved by qualified testing and inspecting agency for firestop systems indicated.

PART 3 - EXECUTION

3.1 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION

- A. General: Install through-penetration firestop systems to comply with Part 1 "Performance Requirements" Article and with firestop system manufacturer's written installation instructions and published drawings for products and applications indicated.
- B. Install forming/damming/backing materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
- C. Install fill materials for firestop systems by proven techniques to produce the following results:
 - 1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
 - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 - 3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.2 FIELD QUALITY CONTROL

- A. Where deficiencies are found, repair or replace through-penetration firestop systems so they comply with requirements.
- B. Proceed with enclosing through-penetration firestop systems with other construction only after installations comply with requirements.

END OF SECTION 078413

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes joint sealants for the following applications:
 - 1. Exterior joints in vertical surfaces and horizontal non-traffic surfaces.
 - 2. Interior joints in vertical surfaces and horizontal non-traffic surfaces.

1.2 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples: For each type and color of joint sealant required.
- C. Product certificates and test reports.

1.4 QUALITY ASSURANCE

- A. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates according to the method in ASTM C 1193 that is appropriate for the types of Project joints.

1.5 WARRANTY

- A. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Available Products:
 - a. Bostik Findley.
 - b. Dow Corning Corporation.
 - c. GE Silicones.
 - d. Pecora Corporation.
 - e. Polymeric Systems Inc.
 - f. Schnee-Morehead, Inc.
 - g. Sonneborn, Division of ChemRex Inc.
 - h. Tremco.

2.4 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:

2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants.
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant.
 - a. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
 - 2. Remove laitance and form-release agents from concrete.
 - a. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION

- A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

- B. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- C. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- D. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
- E. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Interior standard steel doors and frames.
 - 2. Exterior standard steel doors and frames.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Include the following:
 - 1. Elevations of each door type.
 - 2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
 - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
- C. Product Schedule: For hollow-metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

1.4 INFORMATIONAL SUBMITTALS

- A. Product test reports.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Airtec Corporation.
 - 2. Apex Industries, Inc.
 - 3. Ceco Door; ASSA ABLOY.

4. [Curries Company; ASSA ABLOY.](#)
5. [Republic Doors and Frames.](#)
6. [West Central Manufacturing, Inc.](#)

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
 1. Smoke- and Draft-Control Assemblies: Provide assemblies with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.

2.3 EXTERIOR STANDARD STEEL DOORS AND FRAMES

- A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Extra-Heavy-Duty Doors and Frames: SDI A250.8, Level 3; SDI A250.4, Level A. At locations indicated in the Door and Frame Schedule.
 1. Doors:
 - a. Type: As indicated in the Door and Frame Schedule.
 - b. Thickness: 1-3/4 inches (44.5 mm).
 - c. Face: Metallic-coated steel sheet, minimum thickness of 16 ga.with minimum A40 (ZF120)coating.
 - d. Edge Construction: Model 1, Full Flush.
 - e. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets. Seal joints against water penetration.
 - f. Bottom Edges: Close bottom edges of doors with end closures or channels of same material as face sheets. Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape.
 - g. Core: Polystyrene.
 - h. Fire-Rated Core: Manufacturer's standard vertical steel stiffener with insulation core for fire-rated doors.
 2. Frames:
 - a. Materials: Metallic-coated steel sheet, minimum thickness of 16 ga., with minimum A40 (ZF120) coating.
 - b. Construction: Full profile welded.

2.4 FRAME ANCHORS

- A. Jamb Anchors:

1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
 2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches (610 mm) of frame height above 7 feet (2.1 m).
 3. Postinstalled Expansion Anchor: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.
- B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.
- C. Floor Anchors for Concrete Slabs with Underlayment: Adjustable-type anchors with extension clips, allowing not less than 2-inch (51-mm) height adjustment. Terminate bottom of frames at top of underlayment.
- D. Material: ASTM A 879/A 879M, Commercial Steel (CS), 04Z (12G) coating designation; mill phosphatized.
1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M; hot-dip galvanized according to ASTM A 153/A 153M, Class B.

2.5 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.
- D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- E. Power-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 hollow-metal frames of type indicated.
- F. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.
- G. Glazing: Comply with requirements in Section 088000 "Glazing."

2.6 FABRICATION

- A. Door Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch (19 mm) beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency.

- B. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.
 - 1. Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by welding, or by rigid mechanical anchors.
 - 2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 3. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- C. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
 - 1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 - 2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.

2.7 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 - 1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.
- B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

- A. Hollow-Metal Frames: Comply with NAAMM-HMMA 840.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.
 - a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
 - b. Install frames with removable stops located on secure side of opening.
 2. Fire-Rated Openings: Install frames according to NFPA 80.
 3. Floor Anchors: Secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
 4. Solidly pack mineral-fiber insulation inside frames.
 5. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout or mortar.
 6. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
 - a. Squareness: Plus or minus **1/16 inch (1.6 mm)**, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus **1/16 inch (1.6 mm)**, measured at jambs on a horizontal line parallel to plane of wall.
 - c. 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 wall.
 - d. Plumbness: Plus or minus **1/16 inch (1.6 mm)**, measured at jambs at floor.
- B. Hollow-Metal Doors: Fit and adjust hollow-metal doors accurately in frames, within clearances specified below.
1. Non-Fire-Rated Steel Doors: Comply with NAAMM-HMMA 841 and NAAMM-HMMA guide specification indicated.
 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
 3. Smoke-Control Doors: Install doors according to NFPA 105.
- C. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.

3.3 CLEANING AND TOUCHUP

- A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.
- C. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Solid-core flush wood doors with plastic-laminate-faces.
 - 2. Factory fitting flush wood doors to frames and factory machining for hardware.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product, including the following:
 - 1. Door core materials and construction.
 - 2. Door edge construction
 - 3. Door face type and characteristics.
 - 4. Door louvers.
 - 5. Door trim for openings.
 - 6. Door frame construction.
 - 7. Factory-machining criteria.
 - 8. Factory-priming specifications.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each type of door; construction details not covered in Product Data; and the following:
 - 1. Door schedule indicating door and frame location, type, size, fire protection rating, and swing.
 - 2. Door elevations, dimension and locations of hardware, lite and louver cutouts, and glazing thicknesses.
 - 3. Details of frame for each frame type, including dimensions and profile.
 - 4. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
 - 5. Dimensions and locations of blocking for hardware attachment.
 - 6. Clearances and undercuts.
 - 7. Requirements for veneer matching.
- C. Samples: For plastic-laminate door faces.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For door inspector.
 - 1. Fire-Rated Door Inspector: Submit documentation of compliance with NFPA 80, Section 5.2.3.1.
- B. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

- A. Record Documents: For fire-rated doors, list of door numbers and applicable room name and number to which door accesses.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Wood Door and Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings and temperature-rise limits indicated on Drawings, based on testing at positive pressure in accordance with NFPA 252.
 - 1. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
- B. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing in accordance with UL 1784 and installed in compliance with NFPA 105.

2.2 SOLID-CORE FLUSH WOOD DOORS WITH PLASTIC-LAMINATE FACES

- A. Interior Doors, Solid Core with Plastic-Laminate Faces:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. General Veneer Manufacturing Co.
 - b. Haley Brothers, Inc.
 - c. Lambton Doors.
 - d. Masonite Architectural.
 - e. Poncraft Door Company.
 - f. VT Industries, Inc.
 - g. Vancouver Door Company.
 - 2. Performance Grade: ANSI/WDMA I.S. 1A Heavy Duty.
 - 3. Grade: Premium.
 - 4. Plastic-Laminate Faces: High-pressure decorative laminates complying with ISO 4586-3, Grade HGS.
 - 5. Colors, Patterns, and Finishes: As selected by Architect from laminate manufacturer's full range of products.
 - 6. Exposed Vertical and Top Edges: Plastic laminate that matches faces, applied before faces.
 - a. Fire-Rated Single Doors: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed vertical edges.

- b. Fire-Rated Pairs of Doors:
 - 1) Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.
 - 2) Provide formed-steel edges and astragals with intumescent seals.
 - a) Finish steel edges and astragals with baked enamel same color as doors.
 - b) Finish steel edges and astragals to match door hardware (locksets or exit devices).
 - c. Mineral-Core Doors: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.
 - 1) Screw-Holding Capability: **550 lbf (2440 N)** in accordance with WDMA T.M. 10.
7. Core for Non-Fire-Rated Doors:
- a. WDMA I.S. 10 structural composite lumber.
 - 1) Screw Withdrawal, Face: **550 lbf (2440 N)**.
 - 2) Screw Withdrawal, Edge: **550 lbf (2440 N)**.
8. Core for Fire-Rated Doors: As required to achieve fire-protection rating indicated on Drawings.
9. Construction:
- a. Five plies, **[hot-pressed]** [or] **[cold-pressed]** bonded (vertical and horizontal edging is bonded to core), with entire unit abrasive planed before faces and crossbands are applied.

2.3 LIGHT FRAMES AND LOUVERS

- A. Wood Beads for Light Openings in Wood Doors: Provide manufacturer's standard wood beads unless otherwise indicated.
 - 1. At wood-core doors with 20-minute fire-protection ratings, provide wood beads and metal glazing clips approved for such use.
- B. Metal Frames for Light Openings in Fire-Rated Doors: Manufacturer's standard frame formed of **0.048-inch- (1.2-mm-)** thick, cold-rolled steel sheet; factory primed for paint finish; and approved for use in doors of fire-protection rating indicated on Drawings.
- C. Metal Louvers:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. [ASSA ABLOY.](#)
 - b. [Allegion plc.](#)
 - c. [J. L. Industries, Inc.; Activar Construction Products Group, Inc.](#)
 - d. [McGill Architectural Products.](#)
- 2. Blade Type: Vision-proof, inverted Y.
 - 3. Metal and Finish:
 - a. Extruded aluminum with Class II, clear anodic finish, AA-M12C22A31.

2.4 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated.
 - 1. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
 - 2. Comply with NFPA 80 requirements for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied.
 - 1. Locate hardware to comply with DHI-WDHS-3.
 - 2. Comply with final hardware schedules, door frame Shop Drawings, ANSI/BHMA-156.115-W, and hardware templates.
 - 3. Coordinate with hardware mortises in metal frames, to verify dimensions and alignment before factory machining.
 - 4. For doors scheduled to receive electrified locksets, provide factory-installed raceway and wiring to accommodate specified hardware.
 - 5. Metal Astragals: Factory machine astragals and formed-steel edges for hardware for pairs of fire-rated doors.
- C. Openings: Factory cut and trim openings through doors.
 - 1. Light Openings: Trim openings with moldings of material and profile indicated.
 - 2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 088000 "Glazing."
 - 3. Louvers: Factory install louvers in prepared openings.
- D. Exterior Doors: Factory treat exterior doors with water repellent after fabrication has been completed but before factory priming.

2.5 FACTORY FINISHING

- A. Comply with referenced quality standard for factory finishing.
 - 1. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
 - 2. Finish faces, all four edges, edges of cutouts, and mortises.
 - 3. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.

- B. Factory finish doors.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Hardware: For installation, see Section 087100 "Door Hardware."
- B. Install doors and frames to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
- C. Install frames level, plumb, true, and straight.
 - 1. Shim as required with concealed shims. Install level and plumb to a tolerance of **1/8 inch in 96 inches (3.2 mm in 2400 mm)**.
 - 2. Anchor frames to anchors or blocking built in or directly attached to substrates.
 - a. Secure with countersunk, concealed fasteners and blind nailing.
 - b. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork.
 - 1) For factory-finished items, use filler matching finish of items being installed.
 - 3. Install fire-rated doors and frames in accordance with NFPA 80.
 - 4. Install smoke- and draft-control doors in accordance with NFPA 105.
- D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.
- E. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.2 FIELD QUALITY CONTROL

- 1. Fire-Rated Door Inspections: Inspect each fire-rated door in accordance with NFPA 80, Section 5.2.
- B. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.
- C. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.
- D. Prepare and submit separate inspection report for each fire-rated door assembly indicating compliance with each item listed in NFPA 80 and NFPA 101.

3.3 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.

- B. 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 081416

SECTION 083613 - SECTIONAL DOORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Sectional-door assemblies.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type and size of sectional door and accessory.
- B. Shop Drawings: For each installation and for components not dimensioned or detailed in manufacturer's product data.
- C. Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

- A. Sample warranties.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

1.6 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of sectional doors that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.
- B. Finish Warranty: Manufacturer agrees to repair or replace components that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Provide sectional doors that comply with performance requirements specified without failure from defective manufacture, fabrication, installation, or other defects in construction and without requiring temporary installation of reinforcing components.
- B. Structural Performance, Exterior Doors: Capable of withstanding the design wind loads.
 - 1. Design Wind Load: As indicated on Drawings.
 - 2. Testing: In accordance with ASTM E330/E330M.
- C. Windborne-Debris Impact Resistance: Provide sectional doors complying with the following requirements:
 - 1. Glazed Openings: Pass ASTM E1886 Large Missile Test and cyclic-pressure tests in accordance with ASTM E1996 for enhanced protection and Wind Zone applicable to basic design wind speed indicated on Drawings.
 - 2. Garage-Door Glazed Openings: Pass DASHMA 115.

2.2 SECTIONAL-DOOR ASSEMBLY

- A. Steel Sectional Door: Provide sectional door formed with hinged sections and fabricated so that finished door assembly is rigid and aligned with tight hairline joints; free of warp, twist, and deformation; and complies with requirements in DASHMA 102.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Overhead Door Corporation.
 - b. Rite-Hite Holding Corporation.
 - c. Wayne Dalton; a division of Overhead Door Corporation.
- B. Operation Cycles: Door components and operators capable of operating for not less than 25,000 operation cycles. One operation cycle is complete when door is opened from closed position to the open position and returned to closed position.
- C. Steel Door Sections: ASTM A653/A653M, zinc-coated (galvanized), cold-rolled, commercial steel sheet with **G90 (Z275)** zinc coating.
 - 1. Door-Section Thickness: **2 inches (51 mm)**.
 - 2. Section Faces:
 - a. Thermal-Break Construction: Provide sections with continuous thermal-break construction separating the exterior and interior faces of door.
 - b. Exterior Face: Fabricated from single sheets, not more than **24 inches (610 mm)** high; with horizontal meeting edges rolled to continuous, interlocking, keyed, rabbeted, shiplap, or tongue-in-groove, weather- and pinch-resistant seals and reinforcing flange return.

- 1) Steel Sheet Thickness: 0.064-inch (1.63-mm) nominal coated thickness.
 - 2) Surface: Manufacturer's standard, wood-grain embossed.
- c. Interior Face: Enclose insulation completely within steel exterior facing and interior facing material, with no exposed insulation. Provide the following interior-facing material:
- 1) Zinc-Coated (Galvanized) Steel Sheet: With minimum nominal coated thickness of dimension recommended in writing by manufacturer to comply with performance requirements.
- d. Bottom Section: Reinforce section with a continuous channel or angle conforming to bottom-section profile and allowing installation of astragal (weatherseal).
- e. Hardware Locations: Provide reinforcement for hardware attachment.
- f. Provide locking hardware for each door
3. Thermal Insulation: Insulate interior of steel sections with door manufacturer's standard insulation of type indicated below:
- a. Foamed-in-Place Insulation: Polyurethane, foamed in place to completely fill interior of section and pressure bonded to face sheets to prevent delamination under wind load.
 - b. Fire-Resistance Characteristics: Maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, in accordance with ASTM E84.
- D. Track: Manufacturer's standard, galvanized-steel, high-lift track system. Provide complete system including brackets, bracing, and reinforcement to ensure rigid support of ball-bearing roller guides.
1. Material: Galvanized steel, ASTM A653/A653M, minimum G60 (Z180) zinc coating.
 2. Size: As recommended in writing by manufacturer for door size, weight, track configuration and door clearances indicated on Drawings.
 3. Track Reinforcement and Supports: Provide galvanized-steel members to support track without sag, sway, and vibration during opening and closing of doors. Slot vertical sections of track spaced 2 inches (51 mm) apart for door-drop safety device.
 - a. Horizontal Track: Provide continuous reinforcing angle from curve in track to end of track, attached to track and supported at points by laterally braced attachments to overhead structural members.
- E. Weatherseals: Replaceable, adjustable, continuous, compressible weather-stripping gaskets of flexible vinyl, rubber, or neoprene fitted to bottom top and jambs of door. Provide combination bottom weatherseal and sensor edge for bottom seal.
- F. Windows: Manufacturer's standard window units of shape and size and in locations indicated on Drawings. Set glazing in vinyl, rubber, or neoprene glazing channel. Provide removable stops of same material as door-section frames. Provide the following glazing:
1. Insulating Glass Units: Manufacturer's standard.
 2. Insert glazing requirements.
- G. Hardware: Heavy-duty, corrosion-resistant hardware, with hot-dip galvanized, stainless steel, or other corrosion-resistant fasteners, to suit door type.

1. Hinges: Heavy-duty, galvanized-steel hinges of not less than 0.079-inch (2.01-mm) nominal coated thickness at each end stile and at each intermediate stile, in accordance with manufacturer's written recommendations for door size.
 - a. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts. Use rivets or self-tapping fasteners where access to nuts is impossible.
 2. Rollers: Heavy-duty rollers with steel ball bearings in case-hardened steel races, mounted to suit slope of track. Extend roller shaft through both hinges where double hinges are required. Match roller-tire diameter to track width.
 3. Push/Pull Handles: Equip each door with galvanized-steel lifting handles on each side of door, finished to match door.
- H. Locking Device:
1. Locking Device Assembly: Fabricate with cylinder lock, spring-loaded deadbolt, operating handle, cam plate, and adjustable locking bars to engage through slots in tracks.
 2. Safety Interlock Switch: Equip power-operated doors with safety interlock switch to disengage power supply when door is locked.
- I. Counterbalance Mechanism:
1. Torsion Spring: Adjustable-tension torsion springs complying with requirements of DASMA 102 for number of operation cycles indicated, mounted on torsion shaft.
 2. Cable Drums and Shaft for Doors: Cast-aluminum cable drums mounted on torsion shaft and grooved to receive door-lifting cables as door is raised.
 - a. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of torsion shaft.
 3. Cables: Aircraft quality braded steel lift cables.
 4. Cable Safety Device: Include a spring-loaded steel or bronze cam mounted to bottom door roller assembly on each side and designed to automatically stop door if lifting cable breaks.
 5. Bracket: Provide anchor support bracket as required to connect stationary end of spring to the wall and to level the shaft and prevent sag.
 6. Bumper: Provide spring bumper at each horizontal track to cushion door at end of opening operation.
- J. Electric Door Operator: Electric door operator assembly of size and capacity recommended by door manufacturer for door and operation cycles specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, solenoid-operated brake, clutch, control stations, control devices, integral gearing for locking door, and accessories required for proper operation.
1. Comply with NFPA 70.
 2. Control equipment complying with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6; with NFPA 70, Class 2 control circuit, maximum 24 V ac or dc.

3. Safety: Listed in accordance with UL 325 by a qualified testing agency for commercial or industrial use; moving parts of operator enclosed or guarded if exposed and mounted at 8 ft. (2.4 m) or lower.
4. Usage Classification: Heavy duty, 25 or more cycles per hour and more than 90 cycles per day.
5. Operator Type: as recommended by manufacturer for the duty, door size and use requirement.
6. Motor: Reversible-type with controller (disconnect switch) for motor exposure. Use adjustable motor-mounting bases for belt-driven operators.
 - a. Motor Size: Sufficiently sized as required to start, accelerate, and operate door in either direction from any position, at a speed not less than 10 in./sec. and not more than 12 in./sec..
 - b. Electrical Characteristics: refer to electrical specifications.
7. Limit Switches:
 - a. Opening of door: Door operator shall be set to open completely without stopping.
 - b. Closing of door: Door operator shall be set to allow stopping at any height above finished floor.
8. Obstruction Detection: Automatic external entrapment protection consisting of automatic safety sensor capable of protecting full width of door opening. Activation of device immediately stops and reverses downward door travel.
9. Control Station: Surface mounted, three-position (open, close, and stop) control.
 - a. Operation: Push button.
 - b. Each operator shall be plainly labeled for each door and mounted to the side of the door it operates.
 - c. Provide additional bank of door openers to be located in apparatus room near entry door to Vestibule-2.
 - 1) Provide high contrast labeling for each button identifying the door number it operates. Labeling shall be provided as engraved color contrast vinyl signs adhered to wall above each button.
 - d. Interior-Mounted Unit: Full-guarded, surface-mounted, heavy-duty type, with general-purpose NEMA ICS 6, Type 1 Insert requirements enclosure.
 - 1) Manual and Radio-control operation.
10. Emergency Manual Operation: Push-up type designed so required force for door operation does not exceed 25 lbf (111 N).
11. Emergency Operation Disconnect Device: Hand-operated disconnect mechanism for automatically engaging manual operator and releasing brake for emergency manual operation while disconnecting motor without affecting timing of limit switch. Mount mechanism so it is accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.
12. Motor Removal: Design operator so motor can be removed without disturbing limit-switch adjustment and without affecting emergency manual operation.

K. Metal Finish:

1. Baked-Enamel or Powder-Coat Finish: Manufacturer's standard baked-on finish consisting of prime coat and thermosetting topcoat.
 - a. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install sectional doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; in accordance with manufacturer's written instructions.
- B. Tracks:
 1. Fasten vertical track assembly to opening jambs and framing with fasteners spaced not more than 24 inches (610 mm) apart.
 2. Hang horizontal track assembly from structural overhead framing with angles or channel hangers attached to framing by welding or bolting, or both. Provide sway bracing, diagonal bracing, and reinforcement as required for rigid installation of track and door-operating equipment.
- C. Accessibility: Install sectional doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.
- D. Power-Operated Doors: Install automatic garage doors openers in accordance with UL 325.

3.2 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain sectional doors.

END OF SECTION 083613

SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Exterior storefront framing.
2. Exterior manual-swing entrance doors.

1.2 PERFORMANCE REQUIREMENTS

A. General Performance: Aluminum-framed systems shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction:

1. Movements of supporting structure indicated on Drawings including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.
2. Dimensional tolerances of building frame and other adjacent construction.
3. Failure includes the following:
 - a. Deflection exceeding specified limits.
 - b. Thermal stresses transferring to building structure.
 - c. Framing members transferring stresses, including those caused by thermal and structural movements to glazing.
 - d. Noise or vibration created by wind and by thermal and structural movements.
 - e. Loosening or weakening of fasteners, attachments, and other components.
 - f. Failure of operating units.

B. Delegated Design: Design aluminum-framed systems, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

C. Wind Loads: As indicated on Drawings.

D. Deflection of Framing Members:

1. Deflection Normal to Wall Plane: Limited to edge of glass in a direction perpendicular to glass plane shall not exceed L/175 of the glass edge length for each individual glazing lite or an amount that restricts edge deflection of individual glazing lites to **3/4 inch (19 mm)**, whichever is less.
2. Deflection Parallel to Glazing Plane: Limited to L/360 of clear span or **1/8 inch (3.2 mm)**, whichever is smaller.

E. Air Infiltration: Provide aluminum-framed systems with maximum air leakage through fixed glazing and framing areas of **0.06 cfm/sq. ft. (0.03 L/s per sq. m)** of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of **1.57 lbf/sq. ft. (75 Pa)**.

- F. Water Penetration under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft. (300 Pa).

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For aluminum-framed systems. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Include details of provisions for system expansion and contraction and for drainage of moisture in the system to the exterior.
- C. Samples: For each type of exposed finish required.
- D. Other Action Submittals:
 - 1. Entrance Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams.
- E. Delegated-Design Submittal: For aluminum-framed systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- F. Product test reports.
- G. Maintenance data.
- H. Warranties: Sample of special warranties.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Engineering Responsibility: Prepare data for aluminum-framed systems, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in systems similar to those indicated for this Project.
- C. Product Options: Information on Drawings and in Specifications establishes requirements for systems' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
- D. Accessible Entrances: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines.

- E. Source Limitations for Aluminum-Framed Systems: Obtain from single source from single manufacturer.
- F. Preinstallation Conference: Conduct conference at Project site.

1.5 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: five years from date of Substantial Completion.
- B. Special Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes do not comply with requirements or that fail in materials or workmanship within specified warranty period. Warranty does not include normal weathering.
 - 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. United States Aluminum.
 - 2. Vistawall Architectural Products; The Vistawall Group; a Bluescope Steel company.

2.2 MATERIALS

- A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
 - 1. Sheet and Plate: **ASTM B 209 (ASTM B 209M)**.
 - 2. Extruded Bars, Rods, Profiles, and Tubes: **ASTM B 221 (ASTM B 221M)**.
 - 3. Extruded Structural Pipe and Tubes: ASTM B 429.
 - 4. Structural Profiles: ASTM B 308/B 308M.
 - 5. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.
- B. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer, complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.
 - 1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
 - 2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.

3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

2.3 FRAMING SYSTEMS

- A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
 1. Construction: Thermally broken.
 2. Glazing System: Retained mechanically with gaskets on four sides.
 3. Glazing Plane: Center.
- 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.
 1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
 2. Reinforce members as required to receive fastener threads.
 3. Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system.
- D. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.
- E. Framing System Gaskets and Sealants: Manufacturer's standard, recommended by manufacturer for joint type.

2.4 GLAZING SYSTEMS

- A. Glazing: As specified in Division 08 Section "Glazing."
- B. Glazing Gaskets: Manufacturer's standard compression types; replaceable, molded or extruded, of profile and hardness required to maintain watertight seal.
- C. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.

2.5 ENTRANCE DOOR SYSTEMS

- A. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing operation.
 1. Door Construction: 1-3/4-inch (44.5-mm) overall thickness, with minimum 0.125-inch (3.2-mm-) thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.
 - a. Thermal Construction: High-performance plastic connectors separate aluminum members exposed to the exterior from members exposed to the interior.

2. Door Design: Medium stile; 3-1/2-inch (88.9-mm) nominal width.
3. Glazing Stops and Gaskets: Square, snap-on, extruded-aluminum stops and preformed gaskets.

2.6 ENTRANCE DOOR HARDWARE

- A. General: Provide entrance door hardware sets indicated in door hardware schedule for each entrance door and to comply with requirements in this Section.
 1. Entrance Door Hardware Sets: Provide quantity, item, size, finish or color indicated, of manufacturers' products.
 2. Opening-Force Requirements:
 - a. Egress Doors: Not more than 15 lbf (67 N) to release the latch and not more than 30 lbf (133 N) to set the door in motion and not more than 15 lbf (67 N) to open the door to its minimum required width.
- B. Opening-Force Requirements:
 1. Latches and Exit Devices: Not more than 15 lbf (67 N) required to release latch.
- C. Pivot Hinges: BHMA A156.4, Grade 1.
 1. Offset-Pivot Hinges: Provide top, bottom, and intermediate offset pivots at each door leaf.
- D. Mortise Auxiliary Locks: BHMA A156.5, Grade 1.
- E. Automatic and Self-Latching Flush Bolts: BHMA A156.3, Grade 1.
- F. Panic Exit Devices: BHMA A156.3, Grade 1, listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.
- G. Cylinders: As specified in Division 08 Section "Door Hardware."
 1. Keying: Master key system. Permanently inscribe each key with a visual key control number and include notation.
- H. Strikes: Provide strike with black-plastic dust box for each latch or lock bolt; fabricated for aluminum framing.
- I. Operating Trim: BHMA A156.6.
- J. Closers: BHMA A156.4, Grade 1, with accessories required for a complete installation, sized as required by door size, exposure to weather, and anticipated frequency of use; adjustable to meet field conditions and requirements for opening force.
- K. Weather Stripping: Manufacturer's standard replaceable components.

- L. Weather Sweeps: Manufacturer's standard exterior-door bottom sweep with concealed fasteners on mounting strip.
- M. Thresholds: BHMA A156.21, raised thresholds beveled with a slope of not more than 1:2, with maximum height of 1/2 inch (13 mm).
- N. Egress windows: provide manufacturer's standard code compliant hardware at all bedroom egress windows.
 - 1. Latches and opening hardware shall meet all code requirements.
 - 2. Clear opening, including hardware shall meet all code requirements. Contractor and supplier shall confirm opening requirements prior to ordering and shall be indicated on submittal to Architect.

2.7 FABRICATION

- A. Form or extrude aluminum shapes before finishing.
- B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
- C. 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 fitted joints with ends coped or mitered.
 - 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.
 - 6. Provisions for field replacement of glazing from interior.
 - 7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- D. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
- E. Entrance Doors: Reinforce doors as required for installing entrance door hardware.
- F. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.
- G. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.8 ALUMINUM FINISHES

- A. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
 - 1. Color: As selected by Architect from full range of industry colors and color densities (including Clear, Dark Bronze and Black anodized colors).

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General:
 - 1. Comply with manufacturer's written instructions.
 - 2. Do not install damaged components.
 - 3. Fit joints to produce hairline joints free of burrs and distortion.
 - 4. Rigidly secure nonmovement joints.
 - 5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
 - 6. Seal joints watertight unless otherwise indicated.
- B. Metal Protection:
 - 1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or applying sealant or tape, or by installing nonconductive spacers as recommended by manufacturer for this purpose.
 - 2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
- C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.
- D. Set continuous sill members and flashing in full sealant bed as specified in Division 07 Section "Joint Sealants" to produce weathertight installation.
- E. Install components plumb and true in alignment with established lines and grades, and without warp or rack.
- F. Install glazing as specified in Division 08 Section "Glazing."
- G. Entrance Doors: Install doors to produce smooth operation and tight fit at contact points.
 - 1. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.

END OF SECTION 084113

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Mechanical and electrified door hardware
2. Electronic access control system components

B. Section excludes:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Division 01 Section "Alternates" for alternates affecting this section.
2. Division 06 Section "Rough Carpentry"
3. Division 06 Section "Finish Carpentry"
4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
5. Division 08 Sections:
 - a. "Metal Doors and Frames"
 - b. "Flush Wood Doors"
 - c. "Stile and Rail Wood Doors"
 - d. "Interior Aluminum Doors and Frames"
 - e. "Aluminum-Framed Entrances and Storefronts"
 - f. "Stainless Steel Doors and Frames"
 - g. "Special Function Doors"
 - h. "Entrances"
6. Division 26 "Electrical" sections for connections to electrical power system and for low-voltage wiring.
7. Division 28 "Electronic Safety and Security" sections for coordination with other components of electronic access control system and fire alarm system.

1.02 REFERENCES

A. UL LLC

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Keying Systems and Nomenclature
4. Installation Guide for Doors and Hardware

C. NFPA – National Fire Protection Association

1. NFPA 70 – National Electric Code
2. NFPA 80 – 2016 Edition – Standard for Fire Doors and Other Opening Protectives

SECTION 087100 - DOOR HARDWARE

3. NFPA 101 – Life Safety Code
4. NFPA 105 – Smoke and Draft Control Door Assemblies
5. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI - American National Standards Institute

1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

1.03 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
 - a. Review drawings and Sections from related trades to verify compatibility with specified hardware.
 - b. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

B. Action Submittals:

1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
 - a. Wiring Diagrams: For power, signal, and control wiring and including:
 - 1) Details of interface of electrified door hardware and building safety and security systems.
 - 2) Schematic diagram of systems that interface with electrified door hardware.
 - 3) Point-to-point wiring.
 - 4) Risers.
3. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.
 - a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
4. Door Hardware Schedule:
 - a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.
 - b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
 - c. Indicate complete designations of each item required for each opening, include:
 - 1) Door Index: door number, heading number, and Architect's hardware set number.
 - 2) Quantity, type, style, function, size, and finish of each hardware item.
 - 3) Name and manufacturer of each item.
 - 4) Fastenings and other pertinent information.
 - 5) Location of each hardware set cross-referenced to indications on Drawings.
 - 6) Explanation of all abbreviations, symbols, and codes contained in schedule.
 - 7) Mounting locations for hardware.
 - 8) Door and frame sizes and materials.
 - 9) Degree of door swing and handing.
 - 10) Operational Description of openings with electrified hardware covering egress, ingress (access), and fire/smoke alarm connections.

5. Key Schedule:

- a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
- b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
- c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
- d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
- e. Provide one complete bidding list of key cuts and one key system schematic illustrating system usage and expansion. Forward bidding list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
- f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

C. Informational Submittals:

1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
2. Provide Product Data:
 - a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
 - b. Include warranties for specified door hardware.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
 - a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
 - b. Catalog pages for each product.
 - c. Final approved hardware schedule edited to reflect conditions as installed.
 - d. Final keying schedule
 - e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.
 - f. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.

E. Inspection and Testing:

1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:
 - a. Fire door assemblies, in compliance with NFPA 80.
 - b. Required egress door assemblies, in compliance with NFPA 101.

1.04 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project's vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
 - a. For door hardware: DHI certified AHC or DHC.
 - b. Can provide installation and technical data to Architect and other related subcontractors.
 - c. Can inspect and verify components are in working order upon completion of installation.
 - d. Capable of producing wiring diagram and coordinating installation of electrified hardware with Architect and electrical engineers.
4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

B. Certifications:

1. Fire-Rated Door Openings:
 - a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.
 - b. Provide only items of door hardware that are listed products tested by UL LLC, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.
2. Smoke and Draft Control Door Assemblies:
 - a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105
 - b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.
3. Electrified Door Hardware
 - a. Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.
4. Accessibility Requirements:
 - a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.

C. Pre-Installation Meetings

1. Keying Conference
 - a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
 - 1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - 2) Preliminary key system schematic diagram.
 - 3) Requirements for key control system.
 - 4) Requirements for access control.
 - 5) Address for delivery of keys.
2. Pre-installation Conference
 - a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Inspect and discuss preparatory work performed by other trades.
 - c. Inspect and discuss electrical roughing-in for electrified door hardware.
 - d. Review sequence of operation for each type of electrified door hardware.
 - e. Review required testing, inspecting, and certifying procedures.
 - f. Review questions or concerns related to proper installation and adjustment of door hardware.
3. Electrified Hardware Coordination Conference:
 - a. Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.
- B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.
- C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

- D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
- F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.06 COORDINATION

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

1.07 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.
 - 1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
 - 2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.

1.08 MAINTENANCE

- A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.
- B. Turn over unused materials to Owner for maintenance purposes.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Approval of alternate manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category are only to be considered by official substitution request in accordance with section 01 25 00.
- B. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.
- C. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

- A. Fabrication

SECTION 087100 - DOOR HARDWARE

1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer's recognized installation standards for application intended.
 2. Finish exposed screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
 3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with "Metal Doors and Frames", "Flush Wood Doors", "Stile and Rail Wood Doors" to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.
- B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.
- C. Cable and Connectors:
1. Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with number and gage of wires enough to accommodate electric function of specified hardware.
 2. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices.
 3. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

2.03 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Ives 5BB series
2. Acceptable Manufacturers and Products:
 - a. Hager BB1191/1279 series
 - b. Best FBB series

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide five knuckle, ball bearing hinges.
3. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
 - a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
 - b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
4. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
 - a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
 - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
5. 2 inches or thicker doors:
 - a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
 - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
6. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
7. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
8. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - a. Steel Hinges: Steel pins
 - b. Non-Ferrous Hinges: Stainless steel pins
 - c. Out-Swinging Exterior Doors: Non-removable pins
 - d. Out-Swinging Interior Lockable Doors: Non-removable pins
 - e. Interior Non-lockable Doors: Non-rising pins

9. Provide hinges with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component. Provide mortar guard for each electrified hinge specified.

2.04 CONTINUOUS HINGES

A. Manufacturers:

1. Scheduled Manufacturer and Product:
 - a. Ives
2. Acceptable Manufacturers:
 - a. ABH
 - b. Select

B. Requirements:

1. Provide pin and barrel continuous hinges conforming to ANSI/BHMA A156.26., Grade 1.
2. Provide pin and barrel continuous hinges fabricated from 14-gauge, type 304 stainless steel.
3. Provide twin self-lubricated nylon bearings at each hinge knuckle, with 0.25-inch (6 mm) diameter stainless steel pin.
4. Provide hinges capable of supporting door weights up to 600 pounds, and successfully tested for 1,500,000 cycles.
5. On fire-rated doors, provide pin and barrel continuous hinges classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
6. Provide pin and barrel continuous hinges with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
7. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

2.05 ELECTRIC POWER TRANSFER

A. Manufacturers:

1. Scheduled Manufacturer and Product:
 - a. Von Duprin EPT-10
2. Acceptable Manufacturers and Products:
 - a. ABH PT1000
 - b. Security Door Controls PTM

B. Requirements:

1. Provide power transfer with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
2. Locate electric power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.

2.06 PIVOT SETS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Rixson
 - b. ABH

B. Requirements:

1. Provide pivot sets complete with oil-impregnated top pivot, unless indicated otherwise.
2. Where offset pivots are specified, Provide one intermediate pivot for doors less than 91 inches (2311 mm) high and one additional intermediate pivot per leaf for each additional 30 inches (762 mm) in height or fraction thereof. Intermediate pivots spaced equally not less than 25 inches (635 mm) or not more than 35 inches (889 mm) on center, for doors over 121 inches (3073 mm) high.
3. Provide appropriate model where pivot sets are scheduled at fire rated openings.
4. Provide pivots with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware. Locate electrified pivot nearest to electrified locking component. If manufacturer of electrified locking component requires another device for power transfer, then provide recommended power transfer device and appropriate quantity of pivots.
5. Provide mortar guard for each electric pivot specified, unless specified in hollow metal frame specification.

2.07 FLUSH BOLTS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. DCI
 - b. Trimco
 - c. Don-Jo

B. Requirements:

1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

2.08 COORDINATORS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. DCI
 - b. Don-Jo

B. Requirements:

1. Where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors, provide bar-type coordinating device, surface applied to underside of stop at frame head.
2. Provide filler bar of correct length for unit to span entire width of opening, and appropriate brackets for parallel arm door closers, surface vertical rod exit device strikes, or other stop mounted hardware. Factory-prepared coordinators for vertical rod devices as specified.

2.09 MORTISE LOCKS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Schlage L9000 series

2. Acceptable Manufacturers and Products:
 - a. Accurate 9000/9100 series
 - b. Best 45H series

B. Requirements:

1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
2. Indicators: Where specified, provide indicator window measuring a minimum 2-inch x 1/2 inch with 180-degree visibility. Provide messages color-coded with full text and/or symbols, as scheduled, for easy visibility.
3. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
4. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
5. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1-inch (25 mm) throw, constructed of stainless steel.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim. Provide electrified options as scheduled in the hardware sets. Where scheduled, provide switches and sensors integrated into the locks and latches.
7. Provide motor based electrified locksets that comply with the following requirements:
 - a. Universal input voltage – single chassis accepts 12 or 24VDC to allow for changes in the field without changing lock chassis.
 - b. Fail Safe/Fail Secure – changing mode between electrically locked (fail safe) and electrically unlocked (fail secure) is field selectable without opening the lock case.
 - c. Low maximum current draw – maximum 0.4 amps to allow for multiple locks on a single power supply.
 - d. Low holding current – maximum 0.01 amps to produce minimal heat, eliminate "hot levers" in electrically locked applications, and to provide reliable operation in wood doors that provide minimal ventilation and air flow.
 - e. Connections – provide quick-connect Molex system standard.
8. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.

2.10 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Von Duprin 98/35A series
2. Acceptable Manufacturers and Products:
 - a. Detex Advantex series
 - b. Precision APEX 2000 series

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide smooth touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide exit devices with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
7. Provide flush end caps for exit devices.
8. Provide exit devices with manufacturer's approved strikes.
9. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
10. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
11. Provide cylinder or hex-key dogging as specified at non fire-rated openings.

12. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
13. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
14. Provide electrified options as scheduled.
15. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
16. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

2.11 ELECTRIC STRIKES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Von Duprin 6000 Series
2. Acceptable Manufacturers and Products:
 - a. Folger Adam 300 Series
 - b. HES 1006 Series

B. Requirements:

1. Provide electric strikes designed for use with type of locks shown at each opening.
2. Provide electric strikes UL Listed as burglary resistant that are tested to a minimum endurance test of 1,000,000 cycles.
3. Where required, provide electric strikes UL Listed for fire doors and frames.
4. Provide transformers and rectifiers for each strike as required. Verify voltage with electrical contractor.

2.12 MAGNETIC LOCKS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Schlage
2. Acceptable Manufacturers:
 - a. Securitron
 - b. Security Door Controls

B. Requirements:

1. Provide magnetic locks certified to meet ANSI/BHMA A156.23 classification criteria, UL10C, and UL1034 for burglary-resistant electronic locking mechanisms.
2. Provide magnetic locks equipped with SPDT Magnetic Bond Sensing device, where specified, to monitor whether enough magnetic holding force exists to ensure adequate locking and SPDT Door Status Monitor device, where specified, to monitor whether door is open or closed. Provide bond sensors fully concealed within electromagnet to resist tampering or damage.
3. Provide fasteners, mounting brackets, and spacer bars required for mounting and details.
4. Provide power supply recommended and approved by manufacturer of magnetic locks.
5. Where magnetic locks are scheduled, provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of magnetic locks for each individual leaf. Switches control both doors simultaneously at pairs. Locate controls as directed by Architect.

2.13 MAGNETIC LOCKS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Locknetics

2. Acceptable Manufacturers:
 - a. Securitron
 - b. Security Door Controls

B. Requirements:

1. Provide magnetic locks certified to meet ANSI/BHMA A156.23 classification criteria UL10C, and UL1034 for burglary-resistant electronic locking mechanisms.

2.14 KEYSWITCHES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Schlage 650 series
2. Acceptable Manufacturers and Products:
 - a. Security Door Control 700 series
 - b. Securitron MK series

B. Requirements:

1. Provide key switches capable of being configured to momentary or maintained action.
2. Provide key switches that accept a mortise cylinder. Cylinders: Refer to "KEYING" article, herein.

2.15 POWER SUPPLIES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Schlage/Von Duprin PS900 Series
2. Acceptable Manufacturers and Products:
 - a. Dynalock 5000 series
 - b. Security Door Controls 600 series

B. Requirements:

1. Provide power supplies approved by manufacturer of supplied electrified hardware.
2. Provide appropriate quantity of power supplies necessary for proper operation of electrified locking components as recommended by manufacturer of electrified locking components with consideration for each electrified component using power supply, location of power supply, and approved wiring diagrams. Locate power supplies as directed by Architect.
3. Provide regulated and filtered 24 VDC power supply, and UL class 2 listed.
4. Provide power supplies with the following features:
 - a. 12/24 VDC Output, field selectable.
 - b. Class 2 Rated power limited output.
 - c. Universal 120-240 VAC input.
 - d. Low voltage DC, regulated and filtered.
 - e. Polarized connector for distribution boards.
 - f. Fused primary input.
 - g. AC input and DC output monitoring circuit w/LED indicators.
 - h. Cover mounted AC Input indication.
 - i. Tested and certified to meet UL294.
 - j. NEMA 1 enclosure.
 - k. Hinged cover w/lock down screws.
 - l. High voltage protective cover.

2.16 CYLINDERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Schlage Everest 29 S - LFIC
2. Acceptable Manufacturers and Products:
 - a. Best Preferred Patented
 - b. Corbin-Russwin Patented Keyway

B. Requirements:

1. Provide cylinders/cores compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset; manufacturer's series as indicated. Refer to "KEYING" article, herein.
2. Provide cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.
 - a. Patented Open: cylinder with permanent core with open keyway.
 - b. Patented Open: cylinder with interchangeable core with open keyway.
3. Patent Protection: Cylinders/cores requiring use of restricted, patented keys, patent protected.
4. Nickel silver bottom pins.

2.17 KEYING

A. Scheduled System:

1. New factory registered system:
 - a. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Requirements:

- a. Replaceable Construction Cores.
 - 1) Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
 - a) 3 construction control keys
 - b) 12 construction change (day) keys.
 - 2) Owner or Owner's Representative will replace temporary construction cores with permanent cores.
2. Permanent Keying:
 - a. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
 - 1) Master Keying system as directed by the Owner.
 - b. Forward bidding list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
 - c. Provide keys with the following features:
 - 1) Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
 - 2) Patent Protection: Keys and blanks protected by one or more utility patent(s).
 - 3) Geographically Exclusive: Where High Security or Security cylinders/cores are indicated, provide nationwide, geographically exclusive key system complying with the following restrictions.
 - d. Identification:
 - 1) Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
 - 2) Identification stamping provisions must be approved by the Architect and Owner.
 - 3) Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
 - 4) Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
 - 5) Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.
 - e. Quantity: Furnish in the following quantities.
 - 1) Change (Day) Keys: 3 per cylinder/core.
 - 2) Permanent Control Keys: 3.
 - 3) Master Keys: 6.

2.18 KEY CONTROL SYSTEM

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Telkee
2. Acceptable Manufacturers:
 - a. HPC
 - b. Lund

B. Requirements:

1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.
 - a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
 - b. Provide hinged-panel type cabinet for wall mounting.

2.19 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. LCN 4040XP series
2. Acceptable Manufacturers and Products:
 - a. Corbin-Russwin DC8000 series
 - b. Sargent 281 series

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2-inch (38 mm) diameter piston with 5/8-inch (16 mm) diameter double heat-treated pinion journal. QR code with a direct link to maintenance instructions.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards. Provide snap-on cover clip, with plastic covers, that secures cover to spring tube.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck. Provide graphically labelled instructions on the closer body adjacent to each adjustment valve. Provide positive stop on reg valve that prevents reg screw from being backed out.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.20 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer:

- a. Ives
- 2. Acceptable Manufacturers:
 - a. Elmes
 - b. Burns

B. Requirements:

- 1. Provide push plates, push bars, pull plates, pulls, and hands-free reversible door pulls with diameter and length as scheduled.

2.21 PROTECTION PLATES

A. Manufacturers:

- 1. Scheduled Manufacturer:
 - a. Ives
- 2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco

B. Requirements:

- 1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
- 2. Sizes plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
- 3. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.22 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

- 1. Scheduled Manufacturers:
 - a. Glynn-Johnson
- 2. Acceptable Manufacturers:
 - a. No Substitute
 - b. Rixson
 - c. Sargent
 - d. ABH

B. Requirements:

- 1. Provide overhead stop at any door where conditions do not allow for a wall stop or floor stop presents tripping hazard.
- 2. Provide friction type at doors without closer and positive type at doors with closer.

2.23 DOOR STOPS AND HOLDERS

A. Manufacturers:

- 1. Scheduled Manufacturer:
 - a. Ives
- 2. Acceptable Manufacturers:
 - a. Trimco
 - b. Burns

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide concave type where lockset has a push button or thumbturn.
2. Where a wall stop cannot be used, provide universal floor stops.
3. Where wall or floor stop cannot be used, provide overhead stop.
4. Provide roller bumper where doors open into each other and overhead stop cannot be used.

2.24 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Zero International
2. Acceptable Manufacturers:
 - a. Reese
 - b. Legacy

B. Requirements:

1. Provide thresholds, weather-stripping, and gasketing systems as specified and per architectural details. Match finish of other items.
2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
4. Size thresholds 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width unless otherwise specified in the hardware sets or detailed in the drawings.

2.25 SILENCERS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco

B. Requirements:

1. Provide "push-in" type silencers for hollow metal or wood frames.
2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
3. Omit where gasketing is specified.

2.26 FINISHES

A. FINISH: BHMA 626/652 (US26D); EXCEPT:

1. Hinges at Exterior Doors: BHMA 630 (US32D)
2. Aluminum Geared Continuous Hinges: BHMA 628 (US28)
3. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
4. Protection Plates: BHMA 630 (US32D)
5. Overhead Stops and Holders: BHMA 630 (US32D)
6. Door Closers: Powder Coat to Match
7. Wall Stops: BHMA 630 (US32D)
8. Latch Protectors: BHMA 630 (US32D)
9. Weatherstripping: Clear Anodized Aluminum

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 - 2. Custom Steel Doors and Frames: HMMA 831.
 - 3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
 - 4. Installation Guide for Doors and Hardware: DHI TDH-007-20
- B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.
- C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
- F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.
- I. Lock Cylinders:
 - 1. Install construction cores to secure building and areas during construction period.
 - 2. Replace construction cores with permanent cores as indicated in keying section.
 - 3. Furnish permanent cores to Owner for installation.
- J. Wiring: Coordinate with Division 26, ELECTRICAL and Division 28 ELECTRONIC SAFETY AND SECURITY sections for:
 - 1. Conduit, junction boxes and wire pulls.
 - 2. Connections to and from power supplies to electrified hardware.
 - 3. Connections to fire/smoke alarm system and smoke evacuation system.

4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
 5. Connections to panel interface modules, controllers, and gateways.
 6. Testing and labeling wires with Architect's opening number.
- K. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- L. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.
- M. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.
- N. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.
- O. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- P. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
- Q. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- R. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- S. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.03 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.
1. Spring Hinges: Adjust to achieve positive latching when door can close freely from an open position of 30 degrees.
 2. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
 3. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
- B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.04 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items per manufacturer's instructions to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.05 DOOR HARDWARE SCHEDULE

- A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.
- B. Discrepancies, conflicting hardware, and missing items are to 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.
- C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.
- D. Hardware Sets:

Hardware Schedule

Heading #SET#01

1 Single door 101A

1 Single door 127D

Opening sizes vary - AL DR x AL FR

6	Standard Hinge	Ives 5BB1 4 1/2" x 4 1/2" 630 NRP	630
1	Exit Device	Von Duprin CD-33A-NL-OP-626-36" x 84" Door -LH-388/626	626/626
1	Exit Device	Von Duprin CD-33A-NL-OP-626-36" x 90" Door -LH-388/626	626/626
2	Cylinder	Schlage 20-757 626	626
2	Cylinder	Schlage 20-763 626	626
2	Cylinder	Schlage 23-030 Open 606	606
2	Door Pull	Ives 8190EZHD-2 US32D-316 O	US32D-316
2	Surface Closer	LCN 4040XP SCUSH 689	689
2	Threshold	Zero 65A 36"	A
2	Gasketing	Zero 142AA 40"	AA
2	Gasketing	Zero 39A 36"	A

Heading #SET#02

1 Single door 105A
 1 Single door 111A
 1 Single door 125A
 1 Single door 128A

36" x 84" x 1 3/4" - HM DR x HM FR

12	Standard Hinge	Ives 5BB1 4 1/2" x 4 1/2" 630 NRP	630
4	Exit Device	Von Duprin CD-98-L-NL-626-36" x 84" Door 1 3/4"-LH-996L-NL-R/626	626/626
4	Cylinder	Schlage 20-757 626	626
4	Cylinder	Schlage 20-763 626	626
4	Cylinder	Schlage 23-030 Open 606	606
4	Surface Closer	LCN 4040XP SCUSH 689 1 3/4"	689
4	Kick Plate	Ives 8400 US32D B-CS 10" x 34"	US32D
4	Threshold	Zero 65A 36"	A
4	Gasketing	Zero 142AA 40"	AA
4	Gasketing	Zero 328AA 36" x 84"	AA
4	Gasketing	Zero 39A 36"	A

Heading #SET#03

1 Single door 130A

36" x 84" x 1 3/4" - HM DR x HM FR

3	Standard Hinge	Ives 5BB1 4 1/2" x 4 1/2" 630 NRP	630
1	Lockset	Schlage L9080 T 06L 630 x L LH	630
1	Cylinder	Schlage 23-030 Open 606	606
1	Overhead Door Stop	Glynn-Johnson 904S US32D	US32D
1	Threshold	Zero 65D 36"	D
1	Gasketing	Zero 142AA 40"	AA
1	Gasketing	Zero 328AA 36" x 84"	AA
1	Gasketing	Zero 39A 36"	A

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Heading #SET#04

1 Single door 105B
1 Single door 125B
1 Single door 125C
1 Single door 125D

Opening sizes vary - Door and Frame materials vary - WH-C

12	Standard Hinge	Ives 5BB1 4 1/2" x 4 1/2" 630 NRP	630
4	Lockset	Schlage L9070 T 06L 630 x L LH	630
4	Cylinder	Schlage 23-030 Open 606	606
1	Surface Closer	LCN 4040XP CUSH 689	689
3	Surface Closer	LCN 4040XP CUSH 689 1 3/4"	689
4	Kick Plate	Ives 8400 US32D B-CS 10" x 34"	US32D
4	Floor Door Stop	Ives FS18S	
4	Threshold	Zero 65A 36"	A
4	Gasketing	Zero 188S-BK 96"	-BK

Heading #SET#05

1 Single door 103A

36" x 84" x ___ - WD DR x HM FR

3	Standard Hinge	Ives 5BB1HW 4 1/2" x 4 1/2" 652	652
1	Latchset	Schlage L9010 06L 630 x L LH	630
1	Overhead Door Stop	Glynn-Johnson 904S US32D	US32D
1	Gasketing	Zero 188S-BK 96"	-BK

Heading #SET#06

1 Single door 104A

1 Single door 109A

1 Single door 109B

1 Single door 121A

1 Single door 122A

36" x 84" x ___ - WD DR x HM FR - WH-20

15	Standard Hinge	Ives 5BB1HW 4 1/2" x 4 1/2" 652	652
5	Lockset	Schlage L9040 06A 630 x A LH L283-722	630
5	Surface Closer	LCN 4040XP CUSH 689	689
5	Kick Plate	Ives 8400 US32D B-CS 10" x 34"	US32D
5	Floor Door Stop	Ives FS18S	
5	Gasketing	Zero 188S-BK 96"	-BK

Heading #SET#07

1 Single door 106A
 1 Single door 107A
 1 Single door 108A
 1 Single door 110A
 1 Single door 113A
 1 Single door 114A
 1 Single door 115A
 1 Single door 116A
 1 Single door 117A
 1 Single door 118A
 1 Single door 119A
 1 Single door 120A
 1 Single door 123A
 1 Single door 124A

36" x 84" x ___ - WD DR x HM FR - WH-C

42	Standard Hinge	Ives 5BB1HW 4 1/2" x 4 1/2" 652	652
14	Latchset	Schlage L9010 06L 630 x L LH	630
14	Surface Closer	LCN 4040XP REGARM 689	689
14	Kick Plate	Ives 8400 US32D B-CS 10" x 34"	US32D
14	Floor Door Stop	Ives FS18S	
14	Gasketing	Zero 188S-BK 96"	-BK

Heading #SET#08

1 Single door 126A

36" x 84" x 1 3/4" - HM DR x HM FR - WH-C

3	Standard Hinge	Ives 5BB1HW 4 1/2" x 4 1/2" 652	652
1	Latchset	Schlage L9010 06L 630 x L LH	630
1	Surface Closer	LCN 4040XP REGARM 689 1 3/4"	689
1	Kick Plate	Ives 8400 US32D B-CS 10" x 34"	US32D
1	Overhead Door Stop	Glynn-Johnson 904S US32D	US32D
1	Threshold	Zero 65A 36"	A
1	Gasketing	Zero 39A 36"	A
1	Gasketing	Zero 8303AA 36" x 84"	AA

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Glass products.
2. Laminated glass.
3. Insulating glass.
4. Glazing sealants.
5. Glazing tapes.
6. Miscellaneous glazing materials.

1.2 COORDINATION

- ##### A.
- Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances to achieve proper safety margins for glazing retention under each design load case, load case combination, and service condition.

1.3 ACTION SUBMITTALS

- ##### A.
- Product Data: For each type of product.
- ##### B.
- Glass Samples: For each type of glass product other than clear monolithic vision glass; 12 inches (300 mm) square.

1.4 INFORMATIONAL SUBMITTALS

- ##### A.
- Product Certificates: For glass.
- ##### B.
- Product test reports.
- ##### C.
- Preconstruction adhesion and compatibility test report.
- ##### D.
- Sample warranties.

1.5 QUALITY ASSURANCE

- ##### A.
- Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C1021 to conduct the testing indicated.

1.6 WARRANTY

- A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.
1. Warranty Period: 10 years from date of Substantial Completion.
- B. Manufacturer's Special Warranty for Laminated Glass: Manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.
1. Warranty Period: 10 years from date of Substantial Completion.
- C. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is obstruction of vision by dust, moisture, or film on interior surfaces of glass.
1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Oldcastle BuildingEnvelope™.
 2. Pilkington North America.
 3. Trulite Glass & Aluminum Solutions, LLC.
 4. Vitro Architectural Glass.

2.2 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined in accordance with the IBC and ASTM E1300:
1. Design Wind Pressures: As indicated on Drawings.
 2. Thermal Loads: Design glazing to resist thermal stress breakage induced by differential temperature conditions and limited air circulation within individual glass lites and insulated glazing units.

- B. Windborne-Debris-Impact Resistance: **All Exterior** glazing shall pass ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for **Risk Category 4, 145 mph**
 - 1. Large-Missile Test: For glazing located within **30 feet (9.1 m)** of grade.
- C. Safety Glazing (interior locations where indicated): Where safety glazing is indicated (interior locations), provide glazing that complies with 16 CFR 1201, Category II.
- D. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:
 - 1. U-Factors: Center-of-glazing values, in accordance with NFRC 100 and based on most current non-beta version of LBL's WINDOW computer program, expressed as **Btu/sq. ft. x h x deg F (W/sq. m x K)**.
 - 2. SHGC and Visible Transmittance: Center-of-glazing values, in accordance with NFRC 200 and based on most current non-beta version of LBL's WINDOW computer program.
 - 3. Visible Reflectance: Center-of-glazing values, in accordance with NFRC 300.

2.3 GLASS PRODUCTS, GENERAL

- A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.
 - 1. NGA Publications: "Laminated Glazing Reference Manual" and "Glazing Manual."
 - 2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
- B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the IGCC.
- D. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass that complies with performance requirements and is not less than thickness indicated.
- E. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass. Where fully tempered float glass is indicated, provide fully tempered float glass.

2.4 GLASS PRODUCTS

- A. Clear Annealed Float Glass: ASTM C1036, Type I, Class 1 (clear), Quality-Q3.
- B. Tinted Annealed Float Glass: ASTM C1036, Type I, Class 2 (tinted), Quality-Q3.
 - 1. Tint color: To be selected by the Architect.
- C. Fully Tempered Float Glass: ASTM C1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
- D. Heat-Strengthened Float Glass: ASTM C1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
- E. Reflective- and Low-E-Coated Vision Glass: ASTM C1376.
 - 1. Tint color: To be selected by the Architect.

2.5 LAMINATED GLASS

- A. Laminated Glass: ASTM C1172. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.
 - 1. Construction: Laminate glass with polyvinyl butyral interlayer to comply with interlayer manufacturer's written instructions.
 - 2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.
 - 3. Interlayer Color: Clear unless otherwise indicated.
- B. Windborne-Debris-Impact-Resistant Laminated Glass (**all exterior glazing**): Comply with requirements specified above for laminated glass except laminate glass with the following to comply with interlayer manufacturer's written instructions:
 - 1. Construction: Laminate glass with ionoplast interlayer to comply with interlayer manufacturer's written instructions.
 - 2. Interlayer Thickness: Provide thickness not less than that indicated and as needed to comply with requirements.
 - 3. Interlayer Color: to be selected by the Architect from the manufacturers full line of tints.

2.6 INSULATING GLASS

- A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified in accordance with ASTM E2190.
 - 1. Sealing System: Dual seal, with manufacturer's standard primary and secondary sealants.
 - 2. Perimeter Spacer: Manufacturer's standard spacer material and construction.
 - 3. Desiccant: Molecular sieve or silica gel, or a blend of both.

2.7 GLAZING SEALANTS

- A. General:

1. Compatibility: Compatible with one another and with other materials they contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
 2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
 3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range of industry colors.
- B. Neutral-Curing Silicone Glazing Sealant, Class 100/50: Complying with ASTM C920, Type S, Grade NS, Use NT.

2.8 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C1281 and AAMA 800 for products indicated below:
1. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.

2.9 MISCELLANEOUS GLAZING MATERIALS

- A. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- B. Setting Blocks:
1. Type recommended in writing by sealant or glass manufacturer.
- C. Spacers:
1. Type recommended in writing by sealant or glass manufacturer.
- D. Edge Blocks:
1. Type recommended in writing by sealant or glass manufacturer.
- E. Cylindrical Glazing Sealant Backing: ASTM C1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

PART 3 - EXECUTION

3.1 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

- B. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.
- C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.
- D. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- F. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm).
- G. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and in accordance with requirements in referenced glazing publications.

3.2 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Cover vertical framing joints by applying tapes to heads and sills first, then to jambs. Cover horizontal framing joints by applying tapes to jambs, then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Apply heel bead of elastomeric sealant.
- F. Center glass lites in openings on setting blocks, and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- G. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.3 GASKET GLAZING (DRY)

- A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
- B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

- C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended in writing by gasket manufacturer.
- D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended in writing by gasket manufacturer.
- E. Install gaskets so they protrude past face of glazing stops.

3.4 CLEANING AND PROTECTION

- A. Immediately after installation, remove nonpermanent labels and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains.
 - 1. If, despite such protection, contaminating substances do contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.
- C. Remove and replace glass that is damaged during construction period.

END OF SECTION 088000

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:

1. Interior gypsum board.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.

- B. Samples: For the following products:

1. Trim Accessories: Full-size Sample in ~~12-inch-~~ (300-mm-) long length for each trim accessory indicated.
2. Textured Finishes: Manufacturer's standard size for each textured finish indicated and on same backing indicated for Work.

1.3 QUALITY ASSURANCE

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

PART 2 - PRODUCTS

2.1 INTERIOR GYPSUM BOARD

- A. General: Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of gypsum board indicated and whichever is more stringent.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Gypsum Co.
 - b. BPB America Inc.
 - c. G-P Gypsum.

- d. Lafarge North America Inc.
- e. National Gypsum Company.
- f. PABCO Gypsum.
- g. Temple.
- h. USG Corporation.

B. Type X:

- 1. Thickness: 5/8 inch (15.9 mm).
- 2. Long Edges: Tapered.

C. Moisture- and Mold-Resistant Type: With moisture- and mold-resistant core and surfaces.

- 1. Core: 5/8 inch (15.9 mm), Type X.
- 2. Long Edges: Tapered.

2.2 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

- 1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
- 2. Shapes: Verify with Architect (not all indicated may be used)
 - a. Cornerbead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. L-Bead: L-shaped; exposed long flange receives joint compound.
 - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - f. Expansion (control) joint.
 - g. Curved-Edge Cornerbead: With notched or flexible flanges.

2.3 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

- 1. Interior Gypsum Wallboard: Paper.
- 2. Exterior Gypsum Soffit Board: Paper.
- 3. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.
- 4. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

- 1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
- 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use setting-type, sandable topping drying-type, all-purpose compound.
4. Finish Coat: For third coat, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use high-build interior coating product designed for application by airless sprayer and to be used instead of skim coat to produce Level 5 finish.

2.4 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
- C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 1. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- E. Acoustical Sealant: As specified in Division 07 Section "Joint Sealants."
- F. Thermal Insulation: As specified in Division 07 Section "Thermal Insulation."
- G. Vapor Retarder: As specified in Division 07 Section "Thermal Insulation."

PART 3 - EXECUTION

3.1 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide ~~1/4-~~ to ~~1/2-inch-~~ (6.4- to 12.7-mm-) wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

3.2 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Type X: As indicated on Drawings and where required for fire-resistance-rated assembly.
 - 2. Moisture- and Mold-Resistant Type: at all bathrooms and exterior unconditioned spaces, (Type-X where fire rating is required).

3.3 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect. Use Clark Dietrich, vinyl 093 control joint, or approved equal at a maximum of 30'-0" o.c., and as indicated in the drawings.
- C. Interior Trim: Install in the following locations:
 - 1. Cornerbead: Use at outside corners.
 - 2. LC-Bead: Use at exposed panel edges.
 - 3. L-Bead: Use where indicated.
 - 4. U-Bead: Use at exposed panel edges.
 - 5. Curved-Edge Cornerbead: Use at curved openings.

3.4 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 2: Panels that are substrate for tile.
 - 3. Level 4: All interior walls.
 - a. Primer and its application to surfaces are specified in other Division 09 Sections.

3.5 APPLYING TEXTURE FINISHES (texture to be selected by the Architect from the manufacturers full range.

- A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.
- B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture matching approved mockup and free of starved spots or other evidence of thin application or of application patterns.
- C. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written recommendations.

3.6 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

SECTION 095123 - ACOUSTICAL TILE CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Acoustical tiles.
 - 2. Metal suspension system.
 - 3. Accessories.
 - 4. Metal edge moldings and trim.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Research reports.
- C. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

PART 2 - PRODUCTS

- A. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: Class A in accordance with ASTM E1264.
 - 2. Smoke-Developed Index: 450 or less.

2.2 ACOUSTICAL TILES (24" x 24" tiles, where indicated in the drawings)

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. [Armstrong World Industries, Inc.](#)
2. [CertainTeed; SAINT-GOBAIN.](#)
3. [USG Corporation.](#)

- B. Acoustical Tile Standard: Manufacturer's standard tiles of configuration indicated that comply with ASTM E1264.
- C. Classification: basis of design: **Armstrong, Calla Health Zone Airassure, 24"x 24", Square Tegular Lay-in 15/16.**
- D. Color: White.
- E. Edge/Joint Detail: Square Tegular 15/16"
- F. Thickness: 1".
- G. Modular Size: 24"x 24".

2.3 ACOUSTICAL TILES (24" x 48" tiles, Apparatus and Wash Rooms)

- A. [Manufacturers:](#) Subject to compliance with requirements, provide products by one of the following:
 1. [Armstrong World Industries, Inc.](#)
 2. [CertainTeed; SAINT-GOBAIN.](#)
 3. [USG Corporation.](#)
- B. Acoustical Tile Standard: Manufacturer's standard tiles of configuration indicated that comply with ASTM E1264.
- C. Classification: basis of design: **Armstrong, Ceramaguard Fine Fissured, 24"x 48", Square Lay-in 15/16.**
- D. Color: White.
- E. Edge/Joint Detail: Square.
- F. Thickness: 1".
- G. Modular Size: 24"x 48".
- H. Provide Hold Down Clips for all ceiling tiles.

2.4 METAL SUSPENSION SYSTEM

- A. [Manufacturers:](#) Subject to compliance with requirements, provide products by one of the following:
 1. [Armstrong Ceiling & Wall Solutions.](#)
 2. [USG Corporation.](#)

3. CertainTeed

B. Metal Suspension-System: Basis of Design:

1. All interior, 24" x 24" tile locations: Armstrong Prelude XL exposed Tee Suspension System, Hot dipped galvanized 15/16" with G90 steel capping.
2. Apparatus & Wash Bay: Armstrong Prelude Plus XL exposed Tee Suspension System, Hot dipped galvanized 15/16" with Aluminum Capping.
 - a. Provide Hold down clips for all tiles.

2.5 ACCESSORIES

- A. Attachment Devices: Size for five times the design load indicated in ASTM C635/C635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

2.6 METAL EDGE MOLDINGS AND TRIM

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Armstrong World Industries, Inc.
 2. CertainTeed; SAINT-GOBAIN.
 3. USG Corporation.
- B. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations complying with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for of suspension-system runners.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width tiles at borders unless otherwise indicated.
- B. Layout openings for penetrations centered on the penetrating items.

3.2 INSTALLATION OF SUSPENDED ACOUSTICAL TILE CEILINGS

- A. Install suspended acoustical tile ceilings in accordance with ASTM C636/C636M and manufacturer's written instructions.
- B. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical tiles.
1. Do not use exposed fasteners, including pop rivets, on moldings and trim.

SECTION 09 67 23-RESINOUS (EPOXY) FLOORING

POLY-CRETE SLB WITH EPOXY AND URETHANE TOPCOAT (Flintshot)

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This section includes the following:
 - 1. Resinous flooring system for the following spaces:
 - b. Apparatus
 - c. Lockers
 - d. Workout / Exercise
 - e. Wash room
 - f. Mech/ Elec / Comm

1.3 SYSTEM DESCRIPTION: Basis of design: Dur-A-Flex, Poly-Crete SLB with Epoxy and Urethane Topcoat (Flintshot)

- A. The work shall consist of preparation of the substrate, the furnishing and application of a cementitious urethane based self-leveling seamless flooring system with Flintshot quartz aggregate broadcast with epoxy grout coat and urethane topcoat.
- B. The system shall have the color and texture as specified by the Owner with a nominal thickness of 3/16 inch. It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations.

1.4 SUBMITTALS

- A. Product Data: Latest edition of Manufacturer's literature including performance data and installation procedures.
- B. Manufacturer's Safety Data Sheet (SDS) for each product being used.
- C. Samples: A 3 x 3 inch square sample of the proposed system. Color, texture, and thickness shall be representative of overall appearance of finished system subject to normal tolerances.

1.5 QUALITY ASSURANCE

- A. The Manufacturer shall have a minimum of 10 years experience in the production, sales, and technical support of epoxy and urethane industrial flooring and related materials.
- B. The Applicator shall have experience in installation of the flooring system as confirmed by the manufacturer in all phases of surface preparation and application of the product specified.
- C. No requests for substitutions shall be considered that would change the generic type of the specified System.
- D. System shall be in compliance with requirements of United States Department of Agriculture (USDA), Food, Drug Administration (FDA), and local Health Department.
- F. A pre-installation conference shall be held between Applicator, General Contractor and the Owner for review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Packing and Shipping
 - 1. All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product type and batch number.

B. Storage and Protection

1. The Applicator shall be provided with a dry storage area for all components. The area shall be between 60 F and 85 F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.
2. Copies of Safety Data Sheets (SDS) for all components shall be kept on site for review by the Engineer or other personnel.

C. Waste Disposal

1. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste generated during installation of the system.

1.7 PROJECT CONDITIONS

A. Site Requirements

1. Application may proceed while air, material and substrate temperatures are between 60 F and 85 F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.
2. The relative humidity in the specific location of the application shall be less than 85 % and the surface temperature shall be at least 5 F above the dew point.
3. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.

B. Conditions of new concrete to be coated with cementitious urethane material.

1. Concrete shall be moisture cured for a minimum of 7 days and have fully cured a minimum of 14 days in accordance with ACI-308 prior to the application of the coating system pending moisture tests.
2. Concrete shall have a flat rubbed finish, float or light steel trowel finish (a hard steel trowel finish is neither necessary nor desirable).
3. Sealers and curing agents should not to be used.
4. Concrete surfaces on grade shall have been constructed with a vapor barrier to protect against the effects of vapor transmission and possible delamination of the system.

C. Safety Requirements

1. The Owner shall be responsible for the removal of foodstuffs from the work area.
2. Non-related personnel in the work area shall be kept to a minimum.

1.8 WARRANTY

- A. The Contractor shall provide a 5 year warranty for product and installation against defects and / or deficiencies in accordance with the General Conditions of the Contract. Promptly correct any defects or deficiencies which become apparent within the warranty period at no expense to the owner.

PART 2 – PRODUCTS

2.1 FLOORING

A. Dur-A-Flex, Inc, Poly-Crete SLB (self leveling broadcast quartz), seamless flooring system.

1. System Materials:
 - a. Topping: Dur-A-Flex, Inc, Poly-Crete SL resin, hardener and SL aggregate.
 - b. The aggregate shall be Dur-A-Flex, Inc. Flintshot quartz aggregate.
 - d. Grout coat: Dur-A-Flex, Inc. Dur-A-Glaze Shop Floor resin and hardener.
 - e. Topcoat: Dur-A-Flex, Inc. Armor Top resin and hardener and colorant
2. Patch Materials
 - a. Shallow Fill and Patching: Use Dur-A-Flex, Inc. Poly-Crete MD (up to ¼ inch).

b. Deep Fill and Sloping Material (over ¼ inch): Use Dur-A-Flex, Inc. Dur-A-Tex UM.

2.2 MANUFACTURER

- A. Dur-A-Flex, Inc., 95 Goodwin Street, East Hartford, CT 06108, Phone: (860) 528-9838, Fax: (860) 528-2802
- B. Manufacturer of Approved System shall be single source and made in the USA.

2.3 PRODUCT REQUIREMENTS

A. Topping	Poly-Crete SL
1. Percent Reactive	100 %
2. VOC	0 g/L
3. Bond Strength to Concrete ASTM D 4541	>400 psi, substrates fails
4. Compressive Strength, ASTM C 579	9,000 psi
5. Tensile Strength, ASTM D 638	2,175 psi
6. Flexural Strength, ASTM D 790	5,076 psi
7. Impact Resistance @ 125 mils, MIL D-3134, No visible damage or deterioration	160 inch lbs
B. Grout Coat	Dur-A-Glaze Shop Floor
1. VOC	8 g/L
2. Compressive Strength, ASTM D 695	17,500 psi
3. Tensile Strength, ASTM D 638	4,000 psi
4. Flexural Strength, ASTM D 790	6,250 psi
5. Flexural Modulus of Elasticity, ASTM D 790	6.2 x 10 ⁵
6. Abrasion Resistance, ASTM D 4060 CS17 Wheel, 1,000 gm load, 1,000 cycles	24 mg loss
7. Flame Spread/NFPA-101, ASTM E 84	Class A
8. Flammability, ASTM D 635	Self Extinguishing
9. Indentation, MIL D-3134	0.025 Max
10. Impact Resistance MIL D-3134	Pass
11. Water Absorption. MIL D-24613	0.04%
C. Topcoat	Armor Top
1. Percent Solids	95 %
2. VOC	0 g/L
3. Tensile Strength, ASTM D 2370	7,000 psi
4. Adhesion, ASTM 4541	Substrate Failure
5. Hardness, ASTM D 3363	>4H
6. 60 ⁰ Gloss ASTM D 523	Satin: 50 +/-10 Gloss: 75 +/-10
7. Abrasion Resistance, ASTM D4060 CS 17 wheel (1,000 g load) 1,000 cycles	Gloss Satin 4 8 mg loss with grit 10 12 mg loss without grit
8. Pot Life, 70 F, 50% RH	120 Minutes
9. Full Chemical Resistance	7 days

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting flooring performance.
 - 1. Verify that substrates and conditions are satisfactory for flooring installation and comply with requirements specified.

3.2 PREPARATION

- A. General
 - 1. New and existing concrete surfaces shall be free of oil, grease, curing compounds, loose particles, moss,

-
- algae growth, laitance, friable matter, dirt, and bituminous products.
 2. Moisture Testing: Perform tests recommended by manufacturer and as follows.
 - a. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 99% relative humidity level measurement.
 - b. If the relative humidity exceeds 99% then the Owner and/or Engineer shall be notified and advised of additional cost for the possible installation of a vapor mitigation system that has been approved by the manufacturer or other means to lower the value to the acceptable limit.
 3. Mechanical surface preparation
 - a. Shot blast all surfaces to receive flooring system with a mobile steel shot, dust recycling machine (Blastrac or equal). All surface and embedded accumulations of paint, toppings hardened concrete layers, laitance, power trowel finishes and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a minimum profile of CSP 4-5 as described by the International Concrete Repair Institute.
 - b. Floor areas inaccessible to the mobile blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.
 - c. Where the perimeter of the substrate to be coated is not adjacent to a wall or curb, a minimum 3/16 inch deep and 1/4 inch wide key cut shall be made to properly seat the system, providing a smooth transition between areas. The detail cut shall also apply to drain perimeters and expansion joint edges.
 - d. Cracks and joints (non-moving) greater than 1/8 inch wide are to be chiseled or chipped-out and repaired per manufacturer's recommendations.
 4. At spalled or worn areas, mechanically remove loose or delaminated concrete to a sound concrete and patch per manufacturer's recommendations.

3.3 APPLICATION

A. General

1. The system shall be applied in four distinct steps as listed below:
 - a. Substrate preparation
 - b. Topping/overlay application with quartz aggregate broadcast.
 - c. Grout coat application.
 - d. Topcoat application
2. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
3. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.
4. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
5. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

B. Topping

1. The topping shall be applied as a self-leveling system as specified by the Architect. The topping shall be applied in one lift with a nominal thickness of 1/8 inch.
2. The topping shall be comprised of three components, a resin, hardener and filler as supplied by the Manufacturer.
3. The hardener shall be added to the resin and thoroughly dispersed by suitably approved mechanical means. SL Aggregate shall then be added to the catalyzed mixture and mixed in a manner to achieve a homogenous blend.
4. The topping shall be applied over horizontal surfaces using 1/2 inch "v" notched squeegee, trowels or other systems approved by the Manufacturer.
5. Immediately upon placing, the topping shall be degassed with a loop roller.
6. Quartz aggregate shall be broadcast to excess into the wet material at the rate of 1 lbs/sf.
7. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.

C. Grout Coat

-
1. The topcoat shall be squeegee applied and back rolled with a coverage rate of 80-90 sf/gal.
 2. The topcoat shall be comprised of a liquid resin and a liquid hardener that is mixed in the ratio of 1 part hardener to 2 parts resin and installed per the manufacturer's recommendations.

D. Topcoat

1. The topcoat shall be roller applied with dip and roll method at 3 mils.
2. The topcoat shall be comprised of a liquid resin, hardener and colorant mixed per the manufacturer's instructions.
3. The finish floor will have a nominal thickness of 3/16 inch.

3.4 FIELD QUALITY CONTROL

A. Tests, Inspection

1. The following tests shall be conducted by the Applicator:
 - a. Temperature
 1. Air, substrate temperatures and, if applicable, dew point.
 - b. Coverage Rates
 1. Rates for all layers shall be monitored by checking quantity of material used against the area covered.

3.5 CLEANING AND PROTECTION

- A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.
- B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.

SECTION 101416 - PLAQUES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal plaques.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For plaques.

1. Include fabrication and installation details and attachments to other work.
2. Show plaque mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
3. Show message list, typestyles, graphic elements, and layout for each plaque at least half size.

C. Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

A. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of plaques that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 METAL PLAQUES

- A. Cast Plaque: Cast-metal plaque with background texture, border, and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ACE Sign Systems, Inc.
 - b. Gemini Signage; Gemini, Inc.
 - c. Metallic Arts.
 - d. Signs & Decal Corp.
 - 2. Plaque Material: Cast bronze.
 - 3. Plaque Thickness: **0.50 inch** (12.7 mm).
 - 4. Finishes:
 - a. Integral Metal Finish: As selected by Architect from full range of industry finishes.
 - b. Overcoat: Manufacturer's standard baked-on clear coating.
 - 5. Background Texture: As selected by Architect from manufacturer's full range.
 - 6. Integrally Cast Border Style: As indicated on Drawings.
 - 7. Mounting: Concealed studs.

2.2 MATERIALS

- A. Brass Castings: ASTM B584, lead-free alloy recommended by manufacturer and finisher for finish indicated.

2.3 ACCESSORIES

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of plaques, noncorrosive and compatible with each material joined, and complying with the following:
 - 1. Use concealed fasteners and anchors unless indicated to be exposed.
 - 2. Plaque Mounting Fasteners:
 - a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of plaque, screwed into back of plaque, or screwed into tapped lugs cast integrally into back of plaque unless otherwise indicated.

2.4 FABRICATION

- A. General: Provide manufacturer's standard plaques according to requirements indicated.

1. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
 2. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
 3. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
 4. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match plaque finish.
 5. Castings: Fabricate castings free of warp, cracks, blowholes, pits, scale, sand holes, and other defects that impair appearance or strength. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks before finishing.
- B. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted plaques to suit plaque construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.

PART 3 - EXECUTION

3.1 INSTALLATION OF METAL PLAQUES

- A. General: Install plaques using mounting methods indicated and according to manufacturer's written instructions.
1. Install plaques level, plumb, true to line, and at locations and heights indicated, with plaque surfaces free of distortion and other defects in appearance.
 2. Install plaques so they do not protrude or obstruct according to the accessibility standard.
 3. Before installation, verify that plaque surfaces are clean and free of materials or debris that would impair installation.
 4. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- B. Mounting Methods:
1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of plaque. Remove loose debris from hole and substrate surface.
- C. Remove temporary protective coverings and strippable films as plaques are installed.

END OF SECTION 101416

SECTION 104413 - FIRE EXTINGUISHER CABINETS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes fire protection cabinets for fire extinguishers.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For fire protection cabinets. Include plans, elevations, sections, details, and attachments to other work.
- C. Samples: For each exposed product and for each color and texture specified.
- D. Maintenance data.

1.3 QUALITY ASSURANCE

- A. Fire-Rated, Fire Protection Cabinets: Listed and labeled to comply with requirements in ASTM E 814 for fire-resistance rating of walls where they are installed.
- B. Coordinate size of fire protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.
- C. Coordinate sizes and locations of fire protection cabinets with wall depths.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.
- B. Transparent Acrylic Sheet: ASTM D 4802, Category A-1 (cell-cast sheet), 6 mm thick, with Finish 2 (patterned, textured).

2.2 FIRE PROTECTION CABINET

- A. Cabinet Type: Suitable for fire extinguisher.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

- a. J. L. Industries, Inc., a division of Activar Construction Products Group.
 - b. Larsen's Manufacturing Company.
- B. Cabinet Construction: Nonrated
- C. Cabinet Material: Steel sheet.
- D. Semirecessed Cabinet: Cabinet box partially recessed in walls of sufficient depth to suit style of trim indicated; with one-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend). Provide where walls are of insufficient depth for recessed cabinets but are of sufficient depth to accommodate semirecessed cabinet installation.
 - 1. Rolled-Edge Trim: **2-1/2-inch (64-mm)** backbend depth.
- E. Cabinet Trim Material: Steel sheet.
- F. Door Material: Steel sheet.
- G. Door Style: Fully glazed, frameless, backless, acrylic panel.
- H. Door Glazing: Acrylic sheet.
 - 1. Acrylic Sheet Color: Clear transparent acrylic sheet painted black on unexposed side.
- I. Door Hardware: Manufacturer's standard door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated.
- J. Accessories:
 - 1. Mounting Bracket: Manufacturer's standard steel, designed to secure fire extinguisher to fire protection cabinet, of sizes required for types and capacities of fire extinguishers indicated, with plated or baked-enamel finish.
 - 2. Door Lock: friction latch that allows door to be opened during emergency by pulling sharply on door handle.
 - 3. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as directed by Architect.
 - a. Identify fire extinguisher in fire protection cabinet with the words "FIRE EXTINGUISHER".
 - 1) Location: Applied to cabinet door.
 - 2) Application Process: Pressure-sensitive vinyl letters.
 - 3) Lettering Color: White.
 - 4) Orientation: Vertical.
- K. Finishes:
 - 1. Manufacturer's standard baked-enamel paint for the following:
 - a. Exterior of cabinet door and trim, except for those surfaces indicated to receive another finish.
 - b. Interior of cabinet.

2.3 FABRICATION

- A. Fire Protection Cabinets: Provide manufacturer's standard box (tub), with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated. Miter and weld joints and grind smooth.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Examine walls and partitions for suitable framing depth and blocking where semirecessed cabinets will be installed and prepare recesses as required by type and size of cabinet and trim style.
- B. Install fire protection cabinets in locations and at mounting heights indicated.
- C. Fire Protection Cabinets: Fasten cabinets to structure, square and plumb.
- D. Identification: Apply vinyl lettering at locations indicated.
- E. Adjust fire protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.
- F. Replace fire protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 104413

SECTION 104416 - FIRE EXTINGUISHERS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes portable, hand-carried fire extinguishers and mounting brackets for fire extinguishers.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Operation and maintenance data.
- C. Warranty: Sample of special warranty.

1.3 QUALITY ASSURANCE

- A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."
- B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.
- C. Coordinate type and capacity of fire extinguishers with fire protection cabinets to ensure fit and function.

1.4 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure of hydrostatic test according to NFPA 10.
 - b. Faulty operation of valves or release levers.
 - 2. Warranty Period: Six years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS

- A. Fire Extinguishers: Type, size, and capacity for each fire protection cabinet and mounting bracket indicated.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. J. L. Industries, Inc.; a division of Activar Construction Products Group.
 - b. Larsen's Manufacturing Company.
 - 2. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B.
- B. Multipurpose Dry-Chemical Type >: UL-rated 10-lb nominal capacity, with monoammonium phosphate-based dry chemical in manufacturer's standard enameled container.

2.2 MOUNTING BRACKETS

- A. Mounting Brackets: Manufacturer's standard steel, designed to secure fire extinguisher to wall or structure, of sizes required for types and capacities of fire extinguishers indicated, with plated or red baked-enamel finish.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. J. L. Industries, Inc.; a division of Activar Construction Products Group.
 - b. Larsen's Manufacturing Company.
- B. Identification: Lettering complying with authorities having jurisdiction for letter style, size, spacing, and location. Locate as indicated by Architect.
 - 1. Identify bracket-mounted fire extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied to mounting surface.
 - a. Orientation: Vertical.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Examine fire extinguishers for proper charging and tagging.
 - 1. Remove and replace damaged, defective, or undercharged fire extinguishers.

- B. Install fire extinguishers and mounting brackets in locations indicated and in compliance with requirements of authorities having jurisdiction.
 - 1. Mounting Brackets: **54 inches (1372 mm)** above finished floor to top of fire extinguisher.
- C. Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

END OF SECTION 104416

SECTION 10505 – METAL LOCKERS AND BENCHES

PART 1 – GENERAL

SUMMARY

Section Includes:

- A. Wall mounted metal lockers
- B. Locker-room benches

Work not included:

- A. Padlocks: Provided by the owner

DEFINITIONS

Standard Duty:

This term is used to designate a particular type of locker specified in this section, regardless of individual manufacturer designations.

SUBMITTALS

Product Data:

Manufacturer's data and installation instructions

Shop Drawings:

- Show layouts, dimensions, trim, fillers, and accessories
- A. Indicate installation and anchoring methods
- B. Show verified field measurements
- C. Show locker numbering scheme

Samples for Color Selection:

Locker manufacturer's full range of colors

Samples for Color Verification:

Actual finish samples on similar sheet metal

Maintenance Data for Lockers:

Manufacturer's instructions for adjustment, repair, and replacement of doors and latching mechanisms

PROJECT CONDITIONS

Fit lockers neatly to actual construction; take field measurements before fabrication

DELIVERY, STORAGE, AND HANDLING

Do not deliver lockers until spaces to receive lockers are clean and dry.

Protect lockers from damage

PART 2 – PRODUCTS

LOCKER CONFIGURATIONS AND COMPONENTS

Locker Type 1:

- A. Wall Mounted
- B. One-tier
- C. Height: 72 inches
- D. Width: 20 inches
- E. Depth: 20 inches
- F. Doors: Red Powder Coated Tubular Steel.
- G. Sides and vertical dividers: Red Powder Coated Tubular Steel
- H. Shelves: Adjustable boot shelf, adjustable helmet shelf, hanging pole, two appeal hooks.
- I. Top: Red Powder Coated Tubular Steel
- J. Base: Red Powder Coated Tubular Sheet
- K. Door Lockable:
- L. Name Plate
- M. Gear Hangers:
 - a. Provide one set Glove Hangers each locker
 - b. Provide two Kwik Dry Coat Hangers each locker
 - c. Provide one Pant hanger each locker
 - d. Provide two Hanging apparel hooks each locker
 - e. Provide one Helmet Holder each locker.
- N. Basis of Design: “Red Rack” by Ready Rack
818 Trakk Lane
Woodstock, Illinois 60098

1-800-991-2120

- A. Manufacturers: Products of the following manufacturers, provided they comply with requirements of the contract documents, will be among those considered acceptable:
 - 1. Ready Rack

Fabrication:

Weld all joints between frame members

- A. Weld hinges to frame and fasten to door with at least 2 fasteners, which are either tamperproof or concealed when door is closed.

LOCKER-ROOM BENCHES

Benches:

Locker manufacturer's standard products

- A. Tops: Hardwood, solid or glued-laminated; approximately 9 inches wide; finished with clear varnish
- B. Pedestals: Steel with same baked enamel finish as lockers; 6 feet on center, Maximum.
- C. Lengths: As indicated on drawings
- D. Provide fasteners to anchor pedestals to benches and to floor.
- E. Basis of design: Ready Rack
 - Free: Standing Bench
 - (Provide four 48" long benches)

MATERIALS

Steel Sheet:

Cold-rolled, leveled mild steel

Fasteners:

Zinc-, cadmium-, or nickel-plated steel or stainless steel

- A. Exposed bolt heads: Tamperproof type

B. For fastening moving components: Use lock washers or self-locking nuts.

Hinges:

5-knuckle, nonremovable-pin hinges, of loop style with 2 full thicknesses in each leaf; minimum 2 inches high.

A. Minimum of 2 hinges per door

Standard Door Handles:

Die-cast zinc alloy or chrome-plated steel latch lifter and padlock hasp, designed so that door can be closed while locked; pry-resistant

Interior Fittings:

Cadmium- or zinc-plated steel or cast aluminum, except shelves

Number Plates:

Aluminum, zinc alloy, or stainless steel; raised or recessed numerals at least 3/8 inch high.

A. Number lockers as directed by the architect

B. Fasten to doors, centered near the top, using 2 fasteners

FABRICATION – ALL LOCKERS

Factory:

Fabricate and fully assemble lockers; do not knock down for shipping

Make lockers square with rigid joints, without dents or warped surfaces

A. Exposed metal edges: Smooth off sharp edges and corners

B. Exposed welds: Grind flush

C. Door and frame fronts: No exposed bolts or rivet heads

D. Where exposed holes for built-in locks are not used, cover holes neatly using permanent materials

Doors:

Fabricate with flanged edges, reinforced if required for stiffness, and designed to open and close without springing.

A. Fabricate sheet steel doors of one piece

B. Provide extra stiffeners for doors more than 15 inches

Miscellaneous Components:

Provide all parts, filler panels, closures, clips, and fasteners required for a complete installation.

Finishing:

Pretreat and finish all surfaces, both exposed and concealed, except stainless steel, chrome, and aluminum.

- A. Factory-finish all accessory components to match
- B. Pretreatment: Remove scale, rust, and contaminants; chemically degrease and phosphatize.
- C. Finish: Manufacturer's standard baked-on enamel
- D. Color: Standard Red color

PART 3 - EXECUTION

PREPARATION

Clean debris from under and behind lockers before installation

INSTALLATION

Install lockers plumb and level

Anchor lockers securely to substrates in manner recommended by manufacturer

- A. Use reinforcing plates and spacers as required to prevent metal distortion.
- B. Provide anchors at not more than 48 inches on center
- C. Conceal fasteners wherever possible

Install accessory components with flush, tight joints using concealed fasteners.

Anchor benches to floor

ADJUSTING

Adjust doors and latches for smooth operation

CLEANING

Clean and touch up finishes; if finish cannot be restored to original appearance, replace locker.

Use only cleaning and touch-up materials recommended by manufacturer.

END OF SECTION 10505

SECTION 105126 PLASTIC LOCKERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Solid plastic lockers

1.2 RELATED SECTIONS

- A. Division 06 Section "Rough Carpentry" for locker anchorage.

1.3 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. US Federal Government:
 - 1. U.S. Architectural & Transportation Barriers Compliance Board. Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG).
- C. GREENGUARD Environmental Institute (GREENGUARD):
 - 1. GREENGUARD certified low emitting products.

1.4 ACTION SUBMITTALS

- A. Product Data: Manufacturer's data sheets for each type of product indicated include fabrication details, description of materials and finishes.
- B. Shop Drawings: Include overall locker dimensions, floor plan, elevations, sections, details, and attachments to other work. Include choice of options with details.
- C. Samples for Selection: Furnish samples of manufacturer's full range of colors for initial selection.
- D. Samples for Approval: Furnish a physical sample of the material in the selected color.
 - 1. Size: 6 by 6 inch (102 by 102 mm) in type of finish specified.

1.5 INFORMATIONAL SUBMITTALS

- A. Installation instructions.
- B. Warranty: Sample of special warranty.

1.6 MAINTENANCE SUBMITTALS

- A. Operation and Maintenance Data.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Approved manufacturer listed in this section, with minimum 5 years experience in the manufacture of plastic lockers. Manufacturers seeking approval must submit the following in accordance with Instructions to Bidders and Division 01 requirements:
 - 1. Product data, including test data from qualified independent testing agency indicating compliance with requirements.
 - 2. Samples of each component of product specified.
 - 3. List of successful installations of similar products available for evaluation by Architect.
 - 4. Submit substitution request not less than 15 days prior to bid date.
- B. Installers Qualifications: An experienced Installer regularly engaged in the installation of lockers for a minimum of 3 years.
- C. Source Limitations: Obtain plastic lockers and trim accessories from single manufacturer.
- D. Accessibility Requirements: Comply with requirements of ADA/ABA and with requirements of authorities having jurisdiction.
- E. Indoor Environmental Quality Certification: Provide certificate indicated that products have been certified under the following programs, or a comparable certification acceptable to Owner:
 - 1. GREENGUARD Indoor Air Quality Certified.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver plastic lockers to the site until the building is enclosed and HVAC systems are in operation. Deliver plastic lockers in manufacturer's original packaging. Store in an upright condition. Protect plastic lockers from exposure to direct sunlight.
- B. Ship plastic lockers fully assembled.
- C. Lift and handle plastic lockers from the base not the sides.

1.9 WARRANTY

- A. Special Manufacturer's Warranty: 20 year against rust, delamination or breakage of plastic parts under normal use.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide products of Bradley Corporation, Menomonee Falls, WI 53051, (800)272-3539, fax (262)251-5817; Email info@BradleyCorp.com; Website www.bradleycorp.com.
 - a. Submit requests for substitution in accordance with Instructions to Bidders and Division 01 General Requirements.
- B. MATERIALS

1. High Density Polyethylene (HDPE): 30 percent pre-consumer recycled content polyethylene thermoplastic formed under high pressure into solid plastic components.
2. Stainless-Steel Sheet: ASTM A 666, Type 304.
3. Fasteners: Tamper-Resistant Fasteners: Stainless steel torx-head screws.
 - a. Locker Connectors: No. 10-24 sex bolts.
 - b. Anchors: Type and size required for secure anchorage.
 - c. Drilled-in-place Masonry Anchors: Minimum 1/4 by 1-3/4 inch (6 by 44 mm) screws.

2.2 STANDARD PLASTIC LOCKERS

- A. Basis-of-Design Product: **Bradley LENOXLOCKER.**
- B. Locker Configuration: One Tier
- C. Locker Dimensions
 1. Height, Nominal: 72 inch (1829 mm).
 2. Width: 18 inch (457 mm).
 3. Depth: 18 inch (457 mm)
- D. Material: HDPE plastic, 30 percent recycled material.
- E. Sides, Tops, Bottoms, Dividers, and Shelves: 3/8 inch (10 mm) thick HDPE plastic with smooth finish.
- F. Locker Shelves: 3/8 inch (10 mm) HDPE plastic, mortised into sides and back.
- G. Locker Tops: Flat top
- H. Doors: Fabricate from a single piece 1/2 inch (13 mm) HDPE plastic.
 1. Doors and Frame: 1/2 inch (13 mm) thick HDPE plastic with matte texture finish with ventilation slots
 2. Handle: ADA/ABA Compliant handle fabricated from injection molded plastic.
 3. Locks: Standard hasp
 4. Hinges: Continuous piano hinges, .05 inch/18 gauge (1.27 mm) thick type 304 stainless steel fabricated to wrap around edges of door and frame and attached with stainless steel tamper-resistant screws.
 - a. Finish: Powder coated to match color of locker.
 5. Latch Bar: Full-height latch bar constructed of 1/2 inch (13 mm) HDPE plastic secured to locker with stainless steel tamper-resistant screws.
- I. Color: As selected by Architect from manufacturer's full range.
- J. Accessories:
 1. Coat Hooks: Black polycarbonate double hook.

2. End Panels: 3/8 inch (10 mm)1/2 inch (13mm)thick, with color and finish matching locker body.
3. Filler Panels: 1/2 inch (13 mm) HDPE filler panel, with color and finish matching locker body, attached with 3/8 inch (10 mm) thick HDPE solid plastic angle bracket.
4. Wall Hooks: Black powder coated, cast zinc hook onetwothreeper locker.
5. Locker Base: 1 inch (26 mm) solid HDPE plastic, with black or finish matching locker body, 4 inch (101 mm)high.
6. Coat Rod: Schedule 40 PVC with plastic pole sockets and stainless steel tamper-resistant screws.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install lockers in climate controlled environment, shielded from direct sunlight.
- B. General: Install on floor or other firm support. Install level, plumb, and true.
 1. Position locker base per approved shop drawing. Using fasteners provided by manufacturer, anchor base sections to the floor.
 2. Attach filler pieces to lockers with male-female sex bolts.
 3. Position first locker according to submittal layout. Square and plumb the locker using concealed shims. Secure the locker to the wall at the top and bottom of the locker. Position second locker next to first, square and plumb to align the tops and bottoms; and temporarily clamp lockers together. Drill four holes through the sides of the lockers and connect lockers using sex bolts provided by manufacturer.
- C. Accessories: Fit exposed connections of trim, fillers, and closures together to form tight, hairline joints, with concealed fasteners and splice plates furnished by locker manufacturer. Install as indicated on approved shop drawings.
 1. Coat Hooks: Attach with at least two fasteners.
 2. Coat Rods: Attach at height indicated.
 3. Identification Plates: Identify plastic lockers with approved identification numbers. Attach plates to each locker door.
 4. Filler Panels: Attach with concealed fasteners.
 5. Sloping Tops: Attach sloping-tops to plastic lockers, with closures at exposed ends.
 6. Finished End Panels: Attach at ends indicated.

3.2 FINAL CLEANING

- A. Clean locker interior and exterior surfaces.
- B. Remove packaging and construction debris and legally dispose of off-site.

END OF SECTION

SPECIFICATION 10530 – ROD SUPPORTED EXTRUDED ALUMINUM CANOPY

PART 1 - GENERAL

1.01 Related Documents

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, shall apply to work specified in this section.

1.02 General Description of Work

A. Work in this section shall include design, fabrication and installation of a complete rod supported extruded aluminum canopy system in accordance with the drawings and this specification.

1.03 References

- A. Aluminum Design Manual 2000, Specifications & Guidelines for Aluminum Structures.
- B. ASCE 7, Minimum Design Loads for Buildings and Other Structures.
- C. American Architectural Manufacturers Association (AAMA)
- D. American Society for Testing and Materials (ASTM)

1.04 Related Sections

- A. Masonry Work - Section 04200
- B. Miscellaneous Metals - Section 05500
- C. Flashing and Sheet Metal - Section 07600
- D. Sealants - Section 07900

1.05 Submittals

- A. Product Data: Submit manufacturer's product information, specifications and installation instructions for components and accessories.
- B. Shop Drawings: Submit complete erection drawings showing attachment system, column and gutter beam framing, transverse cross sections, covering and trim details, and optional installation details to clearly indicate proper assembly of components.
- C. All canopy systems shall meet all structural requirements as indicated in Drawings for the project wind load and wind speed location.

1.06 Quality Assurance

- A. Codes and standards: Comply with provisions of the following except as otherwise indicated: Local building codes including the current adopted International Building Code, latest addition with amendments, if any. AWS (American Welding Society) standards for structural aluminum welding.
- B. Manufacturer: Obtain aluminum covered walkway system from only one (1) manufacturer.
- C. Installer Qualifications: Firm with not less than three (3) years experience in installation of aluminum walkway covers of type, quantity and installation methods similar to work of this section.
- D. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication where possible, to insure proper fitting of work.
- E. Coordination: Coordinate work of this section with work of other sections which interface with covered walkway system (sidewalk, curbs, building fascias, etc.).

1.07 Warranty

- A. Provide manufactures standard two-year warranty that shall include, but not limited to, coverage for structural, and water tightness beginning the day of Substantial Completion of Installation.
- B. Provide Ten (10) year finish warranty beginning the day of Substantial Completion of Installation.

PART 2 - PRODUCT

2.01 Manufacturers

- A. Provide the specified extruded aluminum canopies from on of the following manufacturers:
 - a. Patio Center
 - b. Mapes
 - c. Tennessee Valley Metals.



2.02 Materials

- A. Aluminum Extrusions: All sections shall be extruded aluminum. With Self mating deck pans.
- B. Finishes: Provide for Anodized aluminum finish, to be selected by the Architect from Clear, Dark Bronze or Black standard anodized aluminum finishes.

2.03 Components

- A. Support rods: Rods shall be 2" tubular shapes as per manufacturer's standard. (Rod and clevis is available as an option.)
- B. Deck: Deck shall be extruded self-flashing sections interlocking into a composite unit.
- C. Fascia: Fascia shall be manufacturer's standard shape. Size as indicated on drawings.
- D. Flashing: Flashing shall be .032" aluminum (min.).
- E. . Scuppers: Scupper plates shall be used to drain water from the canopy fascia.
- F. . Fasteners: All exposed fasteners shall be stainless steel.

2.04 Fabrication

- A. Drainage: Water shall drain directly from the fascia and be diverted by a scupper plate (or into downspout and discharged at ground level).
- B. Deck Construction: Deck shall be manufactured of extruded modules that interlock in a self-flashing manner.

PART 3 - EXECUTION

3.01 Preparation

- A. Erection shall be performed after all concrete, masonry, and roofing work in the vicinity is complete and cleaned.

3.02 Installation

Protective cover shall be erected true to line with adequate slope for drainage. Adequate framing members and/or blocking shall be provided in the wall structure (by others) to safely support the canopy.

3.03 Cleaning

A. All protective cover components shall be cleaned promptly after installation.

3.04 Protection

A. Extreme care shall be taken to protect materials during and after installation.

SECTION 107516 - GROUND-SET FLAGPOLES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes ground-set flagpoles made from aluminum.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, operating characteristics, fittings, accessories, and finishes for flagpoles.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For flagpoles to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain flagpoles as complete units, including fittings, accessories, bases, and anchorage devices, from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Flagpole assemblies, including anchorages and supports, to withstand design loads indicated within limits and under conditions indicated.
 - 1. Wind Loads: Determine according to NAAMM FP 1001. Basic wind speed for Project location indicated in the drawings.

2.3 ALUMINUM FLAGPOLES

- A. Aluminum Flagpoles: Cone-tapered flagpoles fabricated from seamless extruded tubing complying with ASTM B241/B241M, Alloy 6063, with a minimum wall thickness of **3/16 inch (4.8 mm)**.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. [Acme Lingo Flagpoles.](#)
- b. [American Flagpole.](#)
- c. [Baartol Company.](#)
- d. [Ewing Flagpole Co., Inc.; Ewing Group Company.](#)
- e. [Pole-Tech Co., Inc.](#)
- f. [US Flag & Flagpole Supply, LLC.](#)

B. Exposed Height: 30 feet (9 m).

C. Metal Foundation Tube: Manufacturer's standard corrugated-steel foundation tube, 0.060-inch (1.52-mm) wall thickness with 3/16-inch (4.8-mm) steel bottom plate and support plate; 3/4-inch- (19-mm-) diameter, steel ground spike; and steel centering wedges welded together. Galvanize foundation tube after assembly. Furnish loose hardwood wedges at top of foundation tube for plumbing pole.

"Sleeve for Aluminum Flagpole" Paragraph below applies primarily to aluminum flagpoles 30 to 40 feet (9 to 12 m) or less in height.

D. Sleeve for Aluminum Flagpole: Fiberglass or PVC pipe foundation sleeve, made to fit flagpole, for casting into concrete foundation.

2.4 FITTINGS

A. Finial Ball: Flush-seam ball, sized as indicated or, if not indicated, to match flagpole-butt diameter.

1. 0.063-inch (1.6-mm) spun aluminum, finished to match flagpole.

B. Internal Halyard, Winch System: Manually operated winch with control stop device and removable handle, stainless steel cable halyard, and concealed revolving truck assembly with plastic-coated counterweight and sling. Furnish flush access door secured with cylinder lock. Finish truck assembly to match flagpole.

1. Halyard Flag Snaps: Stainless steel swivel snap hooks with neoprene or vinyl covers. Furnish two per halyard.

C. Internal Halyard, Cam Cleat System: 5/16-inch- (8-mm-) diameter, braided polypropylene halyard; cam cleat; and concealed revolving truck assembly with plastic-coated counterweight and sling. Furnish flush access door secured with cylinder lock. Finish truck assembly to match flagpole.

1. Halyard Flag Snaps: Stainless steel swivel snap hooks with neoprene or vinyl covers. Furnish two per halyard.

2.5 MISCELLANEOUS MATERIALS

A. Drainage Material: Crushed stone, or crushed or uncrushed gravel; coarse aggregate.

B. Sand: ASTM C33/C33M, fine aggregate.

- C. Elastomeric Joint Sealant: Single-component nonsag urethane joint sealant complying with requirements in Section 079200 "Joint Sealants."
- D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

2.6 ALUMINUM FINISHES

- A. Natural Satin Finish: AA-M32, fine, directional, medium satin polish; buff complying with AA-M20; seal aluminum surfaces with clear, hard-coat wax.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Sleeves: Locate and secure sleeves in forms by bracing to reinforcement and forms.
- B. Place concrete, as specified in Section 033000 "Cast-in-Place Concrete." Compact concrete in place by using vibrators. Moist-cure exposed concrete for no fewer than seven days or use nonstaining curing compound.
- C. Trowel exposed concrete surfaces to a smooth, dense finish, free of trowel marks, and uniform in texture and appearance. Provide positive slope for water runoff to perimeter of concrete base.

3.2 FLAGPOLE INSTALLATION

- A. General: Install flagpoles where indicated and according to Shop Drawings and manufacturer's written instructions.
- B. Foundation Tube: Place flagpole in tube, seated on bottom plate between steel centering wedges, and install hardwood wedges to secure flagpole in place. Place and compact sand in foundation tube and remove hardwood wedges. Seal top of foundation tube with a 2-inch (50-mm) layer of elastomeric joint sealant and cover with flashing collar.

END OF SECTION 107516

SECTION 122413 - ROLLER WINDOW SHADES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Manually operated roller shades with Dual rollers.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Show fabrication and installation details for roller shades, including shadeband materials, their orientation to rollers, and their seam and batten locations.

1. Motor-Operated Shades: Include details of installation and diagrams for power, signal, and control wiring.

C. Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Product test reports.

1.4 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of products.

PART 2 - PRODUCTS

2.1 MANUALLY OPERATED SHADES WITH DUAL ROLLERS

A. Basis of design: Draper, FlexShade XD, clutch, Dual Roller, with clear anodized Hardware finish.

- B. Chain-and-Clutch Operating Mechanisms: With continuous-loop bead chain and clutch that stops shade movement when bead chain is released; permanently adjusted and lubricated.
- C. Rollers: extruded-aluminum tubes of diameters and wall thicknesses required to accommodate operating mechanisms and weights and widths of shadebands indicated without deflection. Provide with permanently lubricated drive-end assemblies and idle-end assemblies designed to facilitate removal of shadebands for service.
- D. Installation Accessories:
 - 1. Front Fascia: Aluminum extrusion that conceals front and underside of roller and operating mechanism and attaches to roller endcaps without exposed fasteners.
 - 2. Exposed Headbox: Rectangular, extruded-aluminum enclosure including front fascia, top and back covers, endcaps, and removable bottom closure.
 - 3. Endcap Covers: To cover exposed endcaps.
 - 4. Installation Accessories Color and Finish: As selected from manufacturer's full range.

2.2 SHADEBAND MATERIALS

- A. Shadeband Material Flame-Resistance Rating: Comply with NFPA 701. Testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- B. Light-Filtering Fabric: Woven fabric, stain and fade resistant.
 - 1. Source: Roller shade manufacturer.
 - 2. Openness Factor: to be selected by the Architect from the Manufacturer's full line.
 - 3. Color: As selected by Architect from manufacturer's full range.
- C. Light-Blocking Fabric: Opaque fabric, stain and fade resistant.
 - 1. Source: Roller shade manufacturer.
 - 2. Color: As selected by Architect from manufacturer's full range.

2.3 ROLLER SHADE FABRICATION

- A. Product Safety Standard: Fabricate roller shades to comply with WCMA A 100.1
- B. Unit Sizes: Fabricate units in sizes to fill window and other openings as follows, measured at 74 deg F (23 deg C):
 - 1. Outside of Jamb Installation: Width and length as indicated, with terminations between shades of end-to-end installations at centerlines of mullion or other defined vertical separations between openings.

PART 3 - EXECUTION

3.1 ROLLER SHADE INSTALLATION

- A. Install roller shades level, plumb, and aligned with adjacent units according to manufacturer's written instructions.
 - 1. Opaque Shadebands: Located so shadeband is not closer than **2 inches (51 mm)** to interior face of glass. Allow clearances for window operation hardware.
- B. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.
- C. Clean roller shade surfaces, after installation, according to manufacturer's written instructions.
- D. Replace damaged roller shades that cannot be repaired, in a manner approved by Architect, before time of Substantial Completion.

END OF SECTION 122413

SECTION 323129 - WOOD FENCES AND GATES

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes but is not limited to the following:

1. Supply materials for and construct and install fences, railings, and gates of basic types described on the Drawings.
 - a. Wood barrier fence:
 - a. Cedar fencing/walls
2. Furnish labor, materials, equipment and everything else needed to complete the work described by the Drawings and these Specifications.

B. Related Sections:

1. Section 033000 – Cast in place Concrete.

1.2 SYSTEM DESCRIPTION

A. Design Requirements:

1. Fence Height: 6'-0"
2. Post Spacing: 6'-0" maximum
3. Reinforced wood gates.

1.3 SUBMITTALS

A. General: Submit in accordance with Section 013300.

B. Product Data: Provide product data for the following:

1. For the following:
 - a. Species/performance data for all finish wood fencing products.
 - b. Accessories and anchorage devices.

C. Shop Drawings:

1. Complete shop drawings for the fabrication and installation of wood fencing components and gates, including plans, sections and details. Detail interfaces with the work of other trades, including required clearances and connections.

D. Samples:

1. Provide 12" samples of each type of finish material for wood fences and gates.

E. Manufacturers Qualifications:

SECTION 323129 - WOOD FENCES AND GATES

1. Certifications specified in Quality Assurance article.
2. Documentation of manufacturer and installers qualifications, including verification of a minimum of 5 years experience with similar types of Work.

F. Warranty:

1. Manufacturer shall offer a written 2 year limited warranty on all products and associated hardware, against defects in materials and workmanship.
2. Installer shall offer a written 2 year limited warranty on workmanship against defects in installation and workmanship.

1.4 QUALITY ASSURANCE

A. Qualifications of Subcontractor:

1. Fabricate and finish fencing components in a shop qualified in the construction of Architectural Grade millwork.
2. Installation shall be accomplished by tradesmen skilled in the necessary crafts, including, but not limited to; surveying, concrete placement, metal trades, rigging and wire rope fabrication.

1.5 DELIVERY, STORAGE AND HANDLING

A. Transportation and Storage:

1. For materials all materials, including shop-finished as required herein provide protective wrappings and crating as necessary during shipping & handling to maintain integrity and unblemished finish.

1.6 PERFORMANCE REQUIREMENTS

A. Fence posts shall be located with dimension tolerances as follows:

1. Deviation from designated location (if any): $\pm 3''$.
2. Deviation from straight lines or even curves: $\pm 1''$.
3. Misalignment from plumb: $3/8''$ in 4'.

B. Standard for Materials:

1. Metals shall conform to ASTM standards.
 - a. Moisture Content: 19 percent or less.
 - b. Quality Standards: Western Lumber Grading Rules, WWPA.
 - c. Species and Quality fence walls: Western red cedar, MG, grade A.

PART 2 - PRODUCTS

SECTION 323129 - WOOD FENCES AND GATES

2.1 MATERIALS

- A. Steel Framing (gates) - G40 Galvanized square tube as noted on drawings.
- B. Wood Finish - Western red cedar or approved equal, rough-sawn as indicated in Drawings.
- C. ACQ hardware requirement: All hardware in contact with ACQ treated wood to be hot-dipped galvanized.

2.2 COMPONENTS

A. Wood Barrier Walls:

- 1. Boards: Western red cedar.
- 2. Board stain (semi-translucent): per Section 099000.
- 3. Board sealer (clear penetrating): per Section 071900.
- 4. Carriage bolts: stainless steel.
- 5. Washers and Lock Nuts: stainless steel.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions and proceed with work in accordance with Section 017000.

3.2 INSTALLATION

- A. Install in accordance with Division 1 and approved shop drawings.
- B. Layout post locations and stake accurately. Arrange for Architect's inspection and approval before setting posts.
- C. Use templates and setting drawings to accurately place fasteners and intersecting pieces.
- D. Set posts accurately, plumb and with tops in horizontal alignment dead level, or parallel to grade, as directed
- E. Brace posts in exact alignment and plumb.
- F. Place concrete as detailed. Coordinate post mounting with curbs and other concrete assemblies as indicated in Drawings.

3.3 ASSEMBLING HARDWARE

- A. Fasten hardware items securely, in careful alignment, for smooth, effortless operation and best appearance. Do not file or grind galvanized surfaces.

SECTION 323129 - WOOD FENCES AND GATES

- B. Use socket-headed screws, locknuts, “Nyloc” nuts and other appropriate fasteners to discourage disassembly by hand or with crude or common tools.
- C. Make all fastenings tight and permanent, except at the removable fence connections.

END OF SECTION 323129

J DESIGN INTERIORS

Fire Station No. 6 PROJECT MANUAL



Date: 5.30.23 REV1

Project No: 2022-11-004

Address: 201 Camellia Blvd.
Lafayette, LA 70503

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099000	Paint

SECTION 042200 – Glazed Concrete Masonry Unit

PART 1 – GENERAL

1.1 SUMMARY

- A. This section covers information specific to pre-faces concrete block and its installation.

1.2 DESCRIPTION OF WORK

- A. Related Work: Usual requirements for block work, mortars, reinforcing and other details applicable to the concrete block portion of this product shall be in accordance with the Sections covering these items (or) shall be in accordance with best practices for block work, all proposed products and execution subject to prior approval.

1.3 SUBMITTALS

- A. General: Supply complete product literature, color kit, test report copies, representative shapes
- B. Product Data: Submit manufacturer's technical data sheet, care & maintenance document, submittal and/or warranty for each material and accessory proposed.
- C. Samples: Construct a panel at least 4' x 4' for each color. Include all block types and sizes to be used in that color. Do not remove panels until building has been accepted.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall be capable of providing technical training and technical field service representation.
- B. Installer Qualifications: Installer must be professional, licensed, insured and acceptable to manufacturer of resilient stair tread materials.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's recommendations. Protect from damage due to weather, excessive temperatures, and construction operations.
- B. Product shall be palletized with individual faces protected. Keep dry.
- C. Storage and handling: Keep dry. Store on level ground. Do not double stack pallets. Avoid excess.

1.6 PROJECT CONDITIONS

- A. Follow ordinary good practices for concrete block work; suitable temperature and lighting.

1.7 WARRANTY

- A. Provide manufacturer's standard limited commercial warranty to cover manufacturing defects.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design: Spectra-Glaze II Units
- B. Substitutions: Substitutions permitted

2.2 PRODUCTS

A. PRE-FACED CONCRETE BLOCK

- i. Pre-Faced Concrete Block: "Spectra-Glaze® II Units" or equal.
- ii. Facing Components: Facing ingredients must be Spectra-Glaze® Compound made with Spectra-Glaze® polymers, supplied to approved manufacturers by Spectra Materials Corporation, a Spectra Sciences, LLC company, and other ingredients as required to meet or exceed Spectra-Glaze® Block product standards including ASTM C 744.
- iii. Pre-Faced Surfaces: Interior use – smooth, colored satin finish conforming to the most up-to-date official Spectra-Glaze® product standards published by Spectra Industrial Licensing Corporation and the Spectra Group and ASTM C 744. Exterior use – smooth, satin finish, conforming to ASTM C 744, ASTM C 67, paragraph 8 (freeze-thaw) and Thermal Shock Test B100JL, 24P.
- iv. Colors: Select from Manufacturer's established or custom colors. All Standard, Vari-tone®, or Special Colors™ Series must conform to ASTM C 744.
- v. Surface Burning Characteristics of Facing: ASTM E 84; flame spread less than 25; fuel contribution 0; smoke density less than 50. Products of combustion considered non-toxic as determined by BRC 4690 (toxicity testing).
- vi. Types: Plain

- vii. Glazed Face Sizes & Joints: Modular 8"x16" including 1/4" exposed face joints; sizes as shown; long dimensions, horizontal or vertical as shown.
- viii. Concrete Block for Glazing: ASTM C 90 for hollow and solid load-bearing units; Type 1 (moisture controlled). or exterior use require Block-Rite™ integral efflorescence control system.
- ix. Exterior Use: For enhanced durability, use Spectra-Glaze® Plus units and water based epoxy grout or mortar enhanced with water based proofing systems using Crete, WRG. Crete, etc mortar with additives.
- x. Hourly Fire Ratings for Concrete Block: Follow guidelines as listed by Architect and planning and zoning.
- xi. Concrete Block Sizes Before Glazing: Modular; 2", 4", 6", 8", 10", 12" thickness as needed.
- xii. Through-The-Wall Units: Use pre-faced block thickness equal to nominal wall thickness where possible.
- xiii. Shapes: Provide shapes to suit the condition shown.
- xiv. Jointing Tools: Use glass 5/8" for concave joints; clean, non-staining metal tools elsewhere. Replace worn tools promptly.
- xv. Mortars: (define)
- xvi. Related Products: Provide setting mortar, horizontal wire reinforcing, ties and anchors and other accessories needed to properly complete the work.
- xvii. Wiping Rags: Select clean cotton waste or equivalent.
- xviii. Cleaning Compound: Use masonry detergent cleaners such as Spectra® brand of cleaners, Vana-trol® or Deox® in strict accordance with each manufacturer's directions. Do not use any product containing unbuffered hydrochloric acid or other unbuffered acids.

PART 3 – EXECUTION

3.1 GENERAL

- A. General Contractor Responsibilities:

- i. Inspect related conditions; do not start at any location until all adverse conditions at the location have been corrected.
- ii. Lighting: Do no work without proper lighting.
- iii. Supply a safe, climate controlled building and subfloor as detailed in Flexco Installation Instructions and Technical Data document.
- iv. Ensure substrate meets the requirements of ASTM F2169, Flexco Installation Instructions and Technical Data and Excelsior Installation Instructions and Technical Data documents.
- v. Provide a secure storage area that is maintained permanently or temporarily at normal operating temperature and humidity conditions between 50° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the flooring, so the flooring contractor can acclimate the flooring materials per manufacturer's instructions.
- vi. Provide an installation area that is weather tight and maintained either permanently or temporarily at ambient service temperature and humidity. Normal operating temperature and humidity conditions are between 50° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the flooring per the manufacturer's instructions.
- vii. Ensure areas with direct prolonged exposure to sunlight are protected with protective UVA/UVB restrictive coatings or films.
- viii. Areas of the flooring that are subject to direct sunlight through doors or windows should have them covered using blinds, curtains, cardboard or similar for the time of the installation and 72-hours after the installation to allow the adhesive to cure. Note: These areas should be installed using wet adhesives only.
- ix. Conduct initial maintenance prior to final usage per the Flexco Care & Maintenance Documents. Do not conduct initial maintenance until adhesive has cured per the adhesive technical data.

B. Maintenance

- i. Spectra-Glaze® units, properly erected and cleaned after construction, should require very little maintenance other than normal cleaning procedures. Commercial cleaning agents such as pine oils or industrial detergents are recommended in most instances but some paints and special

marking inks not soluble in usual cleaning materials may require special cleaning procedures. Contact your local representative.

3.2 EXAMINATION

- A. Verification of Conditions: Inspect all substrates to ensure they are clean, smooth, permanently dry, flat, and structurally sound. Confirm all areas are properly sealed and acclimated per manufacturer's requirements.
- B. Verification of Products: In accordance with manufacturer's installation requirements, visually inspect material for size, color or visual defects prior to installing. Any material that is incorrect or visually defective shall not be installed.

3.3 INSTALLATION

- A. General: Follow all relevant guidelines detailed in Division 01, as well as flooring and adhesive manufacturer's installation instructions and technical data document.
 - i. Floor Surface: Test for straightness, levelness. Notify job superintendent where grinding or troweled filler corrections are needed.
 - ii. Aligning Base Course: Do not set base course to follow an inaccurate floor line.
 - iii. Cove Base at Thin Floor Coverings: Set cove base tight to a straight, level floor so edge of floor covering will hide the joint.
 - iv. Workmanship: Align glazed faces plumb, level and true to line; uniform joint widths carefully tooled; joints arranged neat and symmetrical, cut units sized and located for best appearance; free of imperfections detracting from overall appearance when viewed at 90 degrees from 5 feet.
 - v. Cutting: For all cuts, including chases, holes and notches for pipes, switch boxes, etc., use saw and other power tools.
 - vi. Jointing: Except where tuckpointing is noted, strike and tool setting mortar.
 - vii. Tuckpointing: Rake out joints at least 1/4". Tuckpoint with the required mortar type. Do not use smeared grout method to fill joints.
 - viii. Scored-Face Block: Lay block in stack bond when aligned vertical joint appearance is required. Rake setting mortar 1/4" and allow to dry. Tuck point raked joints and scored joints at same time.
 - ix. Horizontal Reinforcing: Use in accordance with best practices for concrete block work and applicable building codes.
 - x. Vertical Control Joints: Use in accordance with best practice for concrete block work.

- xi. Exterior Weep Vent Installation: Use weep vents at least 4" long in vertical joint for every second block in base course immediately above grade and immediately above flashing, bond beams, solid fill or other waterstop locations.
- xii. Exterior Wall Coping: Use continuous metal with 6" minimum overhand, or maximum length stone or pre-cast (define flashing and overhand). Exposed joints must be raked back at least 1/4" and caulked with (define) flexible, waterproof sealant in accordance with manufacturer's direction.

3.4 CLEANING & MAINTENANCE

- A. General: Clean up installation area and sweep, dust or wipe material to remove any dirt, dust or debris.
 - i. Keep Glaze Clean: Wipe off all mortar smears and spatters at once, using clean, soft, damp rags. Do not allow hardening.
 - ii. Final Cleandown: Use industrial strength detergents in strict accordance with cleaner manufacturer's instructions, including thorough rinsing. Damp-dry with clean, soft rags. Do not use steel wool, other abrasives or any product containing unbuffered hydrochloric acid or other acids.

3.5 ADDITIONAL RECOMMENDATIONS

- i. Keep overhead lighting at least 3' from the plane of a masonry wall to avoid unsightly shadows.
- ii. Use flush mounted, full wythe modular door frames to insure a neat appearance of masonry walls and reduce cost by deleting cuts and special shapes.
- iii. With scored units, broken bond patterns reduce the cost of installation.
- iv. With scored units, always use stack bond construction when stack bond appearance is selected.
- v. Use double faced (ST) units through-the-wall only when tight bed depth tolerance or second face alignment is not mandatory.
- vi. Cavity wall construction (2" minimum cavity) should be used for all exterior walls, with weep vents (rather than weep holes or wicks) every 32" top, bottom and above all water stops for proper venting and control of water penetration.
- vii. For through-the-wall construction, glazed one side, use sled runner tool to strike joints on exposed block side of wall.

- viii. Strike concave joints in Spectra-Glaze® block walls with at least 5/8" jointing tool.
- ix. For exterior Spectra-Glaze® walls, always rake exposed mortar joints back 1/4" and tuckpoint with epoxy mortar or other waterproof systems.
- x. For concrete masonry construction, use wall reinforcing and control joints in accordance with established procedures to accommodate wall movement and prevent wall cracking. See NCMA TEK bulletins 3, 44, 53.
- xi. Always consider a complimentary mortar color for use with decorative masonry units.
- xii. Use factory-cut unit for mitered corners, for better alignment and reduced cost.
- xiii. When laying Spectra-Glaze® units, adjust raw block bed joints, head joints and coursing to assure alignment of glazed facings and uniformly wide mortar joints (approx. 1/4" exposed).

3.6 CLOSEOUT ACTIVITIES

- A. General: Follow all federal, state and local requirements and Division 01 Section 01 76 00 – Protecting Installed Construction and Section 01 78 00 – Closeout Submittal requirements for these activities.
- B. Protection: Protect newly installed material with construction grade paper or protective boards, such as Masonite or Ram Board, to protect material from damage by other trades. Be sure all construction debris is swept up and removed prior to the protective material being installed and does not get trapped underneath. Limit usage and foot traffic according to the adhesive's requirements. When moving appliances or heavy furniture, protect wall base from scuffing and tearing using temporary floor protection as well.

END OF SECTION

SECTION 06 05 13 DECORATIVE PLASTIC LAMINATE FINISHES**PART 1 – GENERAL****1.1 GENERAL PROVISIONS**

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

1.2 SUMMARY

- A. Section includes:
 - i. Decorative plastic laminates.

1.3 SUBMITTALS, RELATED DOCUMENTS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.
- B. Product Data: Submit manufacturers documentation for each material and accessory proposed for use.
 - i. Technical data sheet
 - ii. Installation Instructions
 - iii. Care & Maintenance document
 - iv. Warranty
- C. Shop Drawings: Each installation.
 - i. Anchorages to other construction, including requirements for concealed supports.
 - ii. Use same unit designations used on Drawings.
- D. Samples for Initial Selection: For each type of product indicated.
- E. Samples for Verification: For each type of product indicated, in manufacturer's standard- size samples of each product color, texture and pattern required.
 - i. 12-inch length of typical framing member in specified finish. 1.
 - ii. Plastic-laminate-clad panels, not less than 8 by 10 inches (200 by 250 mm), for each type, color, pattern, and surface finish [with separate samples of unfaced panel product used for core].
 - iii. Thermoset decorative-overlay-surfaced panels, not less than 8 by 10 inches (200 by 250 mm), for each type, color, pattern, and surface finish.
- F. Product Schedule: Use same designations indicated on Drawings.
- G. Preinstallation Meetings: Conduct conference at Project site.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide resilient wall base materials manufactured in the United States of America by a firm with a minimum of 10 years' experience with resilient rubber materials of type equivalent to those specified.

- B. Provide resilient wall base, flooring materials, adhesives, accessories and subfloor preparation products from one manufacturer to ensure color matching and compatibility.
- C. Manufacturer shall be capable of providing technical training and technical field service representation.

1.5 RELATED WORK

- A. Installer must be professional, licensed, insured and acceptable to manufacturer of resilient flooring materials. Project Managers or Field Supervisors must be INSTALL (International Standards & Training Alliance) certified CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager) for the requirements of the project or equivalent.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Package and ready materials according to manufacturer's instructions.
- B. Do not deliver components until Project is fully enclosed.
- C. Store products inside building protected from light, heat and moisture and never store in contact with floor or outside wall surfaces. Do not expose to continuous direct sunlight.
- D. Store horizontally, face-to-face and back-to-back with the top sheet turned face down.
- E. Sheets must be handled by sliding when possible.
- F. Stored at a temperature not less than 60 degrees F (16 degrees C) and a relative humidity not less than 40 percent.
- G. Provide protective coverings of suitable material. Take special precautions at corners.

1.7 PROJECT CONDITIONS

- A. Coordinate sizes and locations of cut-outs and other related Work specified in other Sections to ensure that interior laminate construction can be supported and installed as indicated.

1.8 WARRANTY

- A. Provide manufacturer's standard limited commercial warranty to cover manufacturing defects.

1.9 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Manufacturer's written maintenance instructions.
- B. Manufacturer warranties transferrable to Owner.
- C. Mock-Ups:
 - i. Build mockups to verify selections made under submittals and to demonstrate aesthetic effects, set quality for materials and construction, set quality standard for fabrication and installation.
 - ii. Acceptable mock-ups may remain as part of the Work if undamaged at time of Substantial Completion.
 - iii. Acceptable mock-ups shall be comparison standard for remaining Work.

1.10 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in fabricating and installing decorative plastic laminate finished work with a minimum 3 years experience.
- B. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in service performance with a minimum 3 years experience.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design: Formica or Wilsonart
- B. Substitutions: Substitutions permitted

2.2 PRODUCTS

- A. Meets the performance requirements for the following Industry Standards:
 - i. Fire-Test-Response Characteristics: Provide decorative plastic laminate with the following surface burning characteristics as determined by testing identical products per ASTM E 84 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:
 - a. 1. Flame-Spread Index: 25 or less.
 - b. 2. Smoke-Developed Index: 450 or less.
 - B. Source Limitations: Obtain decorative plastic laminate materials through one source from a single manufacturer
- B. PLASTIC LAMINATE PRODUCTS
 - i. Description:
 - a. General purpose laminate
 - b. Laminate Grade: Grade 12, HPG- 0.035 Inches (0.9mm)
 - c. Laminate Colors: As selected by interior designer.
 - d. Laminate Finish: As selected by interior designer.
 - e. Laminate applications: As indicated on drawings by Architect.
 - ii. Cabinet Liners
 - a. Description: Cabinet liner, melamine-impregnated decorative surface papers are combined with phenolic-treated kraft paper.
 - b. Laminate Limitations:
 - (1) Interior use only. Do not use in areas exposed to temperatures exceeding 275 degrees F or for exterior applications. Finished panel width should not exceed 24-inches maximum for Cabinet Liner if using a contact adhesive gluing system.

- (2) Laminate Substrate: 45# density, industrial grade particleboard (CS 236-66; Type 1, Grade B, Class 2) or Medium Density Fiberboard (MDF). 1) Ply-wood substrate not acceptable.
- (3) Laminate Grade: C9.
- (4) Laminate Color(s): As selected by Interior Designer.
- (5) Laminate Finish: -58 Matte.
- (6) Laminate Application(s): Heavy Duty Interior Use Cabinets

2.3 INSTALLATION AND MAINTENANCE MATERIALS

- A. Substrate/Background Preparation Products: Adhesives: Adhesives should be selected based on the site conditions and use of the space being installed.

2.4 LAMINATE FABRICATION

- A. Conform to Formica Corporation standard practices, procedures, conditions including preconditioning, panel balancing, material recommendations, machining, equipment and workmanship.
- B. Formica Brand Laminate with low sheen surfaces are subject to marring. Fabricating with peel coat on surface (if applicable) is recommended. Router base should be clean and free of burrs and debris. Table saws should be clean, flat, and free of burrs.
- C. Do not adhere laminates directly to plaster, gypsum board or concrete construction.

PART 3 – EXECUTION

3.1 GENERAL

- A. General Contractor Responsibilities:
 - i. Supply a safe, climate controlled building as detailed in technical notes.
 - ii. Provide an installation area that is weather tight and maintained either permanently or temporarily at ambient service temperature and humidity.
 - iii. Ensure areas with direct prolonged exposure to sunlight are protected with protective UVA/UVB restrictive coatings or films.
 - iv. In areas where the walls are subject to direct sunlight through doors or windows, the doors and windows should be covered using blinds, curtains, cardboard or similar for the time of the installation and 72-hours after the installation to allow the adhesive to cure.
Note: These areas should be installed using wet adhesives only.
 - v. Provide trained installers that are professional, licensed, insured and acceptable to manufacturer of resilient rubber wall base materials.

3.2 EXAMINATION

- A. General: Follow guidelines laid out in Division 01, Section 01 71 00 – Examination and Preparation, as well as Section 01 43 00 – Quality Assurance.

- B. Verification of Conditions: Inspect all substrates/backgrounds to ensure they are clean, smooth, permanently dry, structurally sound and without voids. Confirm all areas are properly sealed and acclimated per manufacturer's requirements.
- C. Verification of Products: In accordance with manufacturer's installation requirements, visually inspect material for size, style, color or visual defects prior to installing. Any material that is incorrect or visually defective shall not be installed.

3.3 INSTALLATION

- A. General: Follow all relevant guidelines detailed in Division 01, as well as wall base and adhesive manufacturer's technical data sheets.
- B. Install decorative plastic laminate in accordance with manufacturer's installation instructions, approved submittals.
- C. Provide templates and rough-in measurements.
- D. Accessory Materials: Install in accordance with manufacturer's written installation instructions

3.4 CLEANING & MAINTENANCE

- A. General: Clean up installation area and vacuum dust or wipe material to remove any dirt, dust or debris. Clean decorative plastic laminate surfaces and edge moldings or aluminum trims in accordance with manufacturer's instructions
- B. Disinfect: Disinfect decorative plastic laminate surfaces in accordance with manufacturer's instructions.
- C. Protection: Do not permit construction near unprotected surfaces.

3.5 CLOSEOUT ACTIVITIES

- A. General: Follow all federal, state and local requirements and Division 01 Section 01 76 00 – Protecting Installed Construction and Section 01 78 00 – Closeout Submittal requirements for these activities, protecting installed construction.
- B. Protection: Protect newly installed material from damage by other trades. Be sure all construction debris is picked up and vacuumed or removed prior to leaving the area. Limit usage and foot traffic according to the adhesive's requirements. When moving appliances or heavy furniture, protect wall base from scuffing and tearing using temporary floor protection as well.

END OF SECTION

SECTION 06 61 19 - QUARTZ SURFACING FABRICATIONS

PART 1 – GENERAL

1.1 SUMMARY

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.
- B. Section Includes:
 - i. Lavatory tops with undermount bowls.
 - ii. Millwork counter tops with sinks.
 - iii. Window Sills.

1.2 DEFINITIONS

- A. Solid Quartz Surface: Quartz surface materials generally consist of natural quartz particles, reacted monomers and resins, pigments and various performance-enhancing additives manufactured as slabs of various specific calipers. Quartz surface materials are solid, non-porous and homogeneous and exhibit strength, hardness and durability.

1.3 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - i. Section 09 65 13.23 Rubber Stair Treads and accessories
 - ii. Section 09 65 13.33 Resilient Accessories
 - iii. Section 09 01 60 Maintenance of Flooring
- B. Related Work: The following items are not included in this Section and are specified under the designated Sections:
 - i. Section 03 30 00 Cast-In-Place Concrete, Substrate Preparation
 - ii. Section 06 10 00 Rough Carpentry, Substrate Preparation
- C. References (Industry Standards):
 - i. ASTM International (ASTM):
 - a. ANSI/NEMA LD 3-05: High Pressure Decorative Laminates (HPDL)
 - b. ANSI/NPA A208.2-09: Medium Density Fiberboard (MDF) For Interior Applications
 - c. ASTM C170/C170M-15a: Standard Test Method for Compressive Strength of Dimension Stone

- d. ASTM C373-14a: Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fires Whiteware products, Ceramic Tiles, and Glass Tiles
- e. NSF/ANSI 51-07: Food Equipment Materials
- f. SCAQMD Rule 1168: Adhesive and Sealant Applications
- g. CAN/ULC-S102-07: Standard Test Method for Surface Burning Characteristics of Building Materials and Assemblies

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meetings: Arrange Preinstallation meeting 1 week prior to commencing work with all parties associated with trade as designated in Contract Documents or as requested by Consultant. Presided over by Contractor, include Consultant who may attend, Subcontractor performing work of this trade, Owner's representative, testing company's representative and consultants of applicable discipline. Review Contract Documents for work included under this trade and determine complete understanding of requirements and responsibilities relative to work included, storage and handling of materials, materials to be used, installation of materials, sequence and quality control, Project staffing, restrictions on areas of work and other matters affecting construction, to permit compliance with intent of work of this Section.

1.5 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.
- B. Product Data: Submit manufacturer's technical data sheet, care & maintenance document, submittal and/or warranty for each material and accessory proposed.
- C. Shop Drawings: Submit Shop Drawings for work of this Section in accordance with Section 01 30 00. Indicate plans, sections, dimensions, component sizes, edge details, thermosetting requirements, fabrication details, attachment provisions, sizes of furring, blocking, including concealed blocking and coordination requirements with adjacent work. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, waste receptacles and other items installed in solid surface.
- D. Coordination Drawings: Submit coordination drawings indicating plumbing and miscellaneous steel work indicating locations of wall rated or non-rated, blocking requirements, locations and recessed wall items and similar items.

- E. Samples: Submit representative samples of each product specified for verification, in manufacturer's standard size samples of each resilient product color, texture and pattern required.
 - i. Submit samples in accordance with Section 01 30 00. Submit minimum 102 mm x 102 mm (4" x 4") samples. Cut sample and seam together for representation of inconspicuous seam. Indicate full range of color and pattern variation. Approved samples will be retained as standards for work.
- 1.6 CLOSEOUT SUBMITTALS
- A. Operation and Maintenance Data:
 - i. Submit manufacturer's care and maintenance data, including cleaning instructions. Include in Project closeout documents
 - ii. Provide a care and maintenance kit. Review maintenance procedures and warranty details with Owner upon completion.
- 1.7 QUALITY ASSURANCE
- A. Installer Qualifications: Provide work of this Section executed by competent installers with minimum 5 years' experience in the application of Products, systems and assemblies specified and with approval and training of the Product manufacturers.
 - B. Mock-Ups:
 - i. Prior to final approval of Shop Drawings, erect 1 full size mock-up of each component at Project site demonstrating quality of materials and execution for Consultant review.
 - ii. Should mock-up not be approved, rework or remake until approval is secured. Remove rejected units from Project site.
 - iii. Approved mock-up will be used as standard for acceptance of subsequent work.
 - iv. Approved mock-ups may remain as part of finished work.
- 1.8 DELIVERY, STORAGE, AND HANDLING
- A. Delivery and Acceptance Requirements: Deliver no components to Project site until areas are ready for installation.
 - B. Storage and Handling Requirements:
 - i. Store components indoors prior to installation.
 - ii. Handle materials to prevent damage to finished surfaces.
- 1.9 WARRANTY

- A. Manufacturer Warranty: Provide manufacturer's standard warranty for material only for period of 10 years against defects and/or deficiencies in accordance with General Conditions of the Contract. Promptly correct any defects or deficiencies which become apparent within warranty period, to satisfaction of Consultant and at no expense to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design:
 - i. Corian Quartz
 - ii. Wilsonart Quartz
- B. Substitutions: Substitutions permitted

2.2 PRODUCTS

- A. SOLID QUARTZ MATERIAL
 - i. Generally consisting of natural quartz particles, reacted monomers and resins, pigments and various performance-enhancing additives manufactured as slabs of various specific calipers. Quartz surface materials are solid, non-porous and homogeneous and exhibit strength, hardness and durability; meeting following criteria:
 - a. Flammability: Flame Spread Value (FSV): ≤ 5 and Smoke Development Value (SDV): ≤ 40 when tested to CAN/ULC-S102 for 2 cm (3/4") and FSV: 0 and SDV: ≤ 10 when tested to CAN/ULC-S102 for 3 cm (1-1/4").
 - b. Food Equipment Material Compliance: Food Zone to NSF/ANSI 51.
- B. Ensure material has minimum physical and performance properties specified under "Performance/Design Criteria".
- C. Adhesive for Bonding to Other Products: One component silicone to ASTM C920.
- D. Sealant: A standard mildew-resistant, FDA/UL [and NSF/ANSI 51 compliant in Food Zone area,] recognized silicone colour matched sealant or clear silicone sealants
- E. Sink/Bowl Mounting Hardware: Manufacturer's approved bowl clips, brass inserts and fasteners for attachment of undermount sinks/bowls.
- F. Heat Reflecting Tape: Manufacturer's standard aluminum foil tape, with required thickness, for use with cutouts near heat sources.

- G. Insulating Nomex® Fabric: Manufacturer's standard for use with conductive tape in insulating solid surface material from adjacent heat source.

2.3 COMPONENTS

- A. Window Sills: 2 cm (3/4") thick solid quartz material, adhesively joined with recommended seam widths not greater than 3 mm (1/8") in finished work, edge details as indicated on Drawings. Color selected later by Consultant from manufacturer's full color range.
- B. Perimeter Frame: Solid quartz material must be supported on a strong perimeter frame. Structural support is required to support the weight of solid quartz material and any external loads. Local Codes may dictate which support material may be used. Typical support materials include cabinetry, wood, plywood and steel. Support material should be moisture resistant. Particleboard is not an acceptable support material
- C. Supporting Seams: Solid quartz material seams require structural support. The structural support needs to be flush with the supporting substructure. Local Codes may dictate which support material may be used. Typical support materials include cabinetry, wood, plywood and steel. Underlayment support material should be moisture resistant. Particleboard is not an acceptable support material
- D. Lavatory Tops with Undermount Bowls: [2 cm (3/4")] [3cm (1-1/4")] thick countertop of solid quartz surfacing material, cast to desired profiles and sizes having edge details as indicated on Drawings conforming to CSA B45.5/IAPMO Z124, complete with [1] undermount bowl. Provide countertops complete with back-splashes of size shown on Drawings. Use undermount hardware according to manufacturer's instructions. Ensure bowl[s] are specified model and white color.
- E. Fabrication:
 - i. Fabricate components in shop to greatest extent practical to sizes and shapes indicated, in accordance with approved Shop Drawings and solid quartz manufacturer requirements. Provide factory cutouts for plumbing fittings and bath accessories as indicated on Drawings.
 - ii. Fabricate joints between components using manufacturer's standard joint adhesive. Ensure joints are as inconspicuous in appearance as possible and without voids.
 - iii. Provide holes and cutouts for plumbing and bath accessories as indicated on Drawings.

- iv. Rout and finish component edges to a smooth, uniform finish. Rout cut-outs, then sand edges smooth. Repair or reject defective or inaccurate work.
- v. Finish: Ensure surfaces have uniform finish:
 - a. Gloss rating >45 is typical.
- vi. Fabrication Tolerances:
 - a. Variation in Component Size: +/- 3mm (+/- 1/8").
 - b. Location of Openings: +/- 3mm (+/- 1/8") from indicated location.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions:
 - i. Examine substrates and conditions, with fabricator present for compliance with requirements for installation tolerances and other conditions affecting performance of work. Proceed with installation only after unsatisfactory conditions have been corrected
 - ii. Verify actual site dimensions and location of adjacent materials prior to commencing work
 - iii. Examine cabinets upon which counter tops are to be installed. Verify cabinets are level to within 3 mm in 3 m (1/8" in 10' - 0")
 - iv. Notify Consultant in writing of any conditions which would be detrimental to installation
- B. Evaluation and Assessment: Commencement of work implies acceptance of previously completed work.

3.2 INSTALLATION

- A. Install components plumb, level, rigid, scribed to adjacent finishes in accordance with reviewed Shop Drawings and Product installation details
- B. Fabricate field joints using manufacturer's recommended adhesive. Keep components and hands clean when making joints. Reinforce field joints as specified herein. Cut and finish component edges with clean, sharp returns
- C. Route radii and contours to template. Anchor securely to base component or other supports. Align adjacent components and form seams to comply with manufacturer's written recommendations using adhesive in color to match work. Carefully dress joints smooth, remove surface scratches and clean entire surface.

- D. Install countertops with no more than 3 mm (1/8") sag, bow or other variation from a straight line.
- E. Adhere undermount/submount/bevel mount sinks/bowls to countertops using manufacturer's recommended adhesive and mounting hardware.
- F. Adhere topmount sinks/bowls to countertops using manufacturer recommended adhesives and color-matched silicone sealant. [Secure seam mount bowls and sinks to counter tops using color matched joint adhesive.]
- G. Seal between wall and components with joint sealant as specified herein and in Section 07 92 00, as applicable.
- H. Provide backsplashes and endsplashes as indicated on Drawings. Adhere to countertops using a standard color-coordinated silicone sealant. Adhere applied sidesplashes to countertops using a standard color-coordinated silicone sealant.
- I. Keep components and hands clean during installation. Remove adhesives, sealants and other stains. Ensure components are clean on date of Substantial Performance of the Work.
- J. Coordinate connections of plumbing fixtures with [Division 22] [Mechanical]. Make plumbing connections to sinks in accordance with [Division 22] [Mechanical].

3.3 REPAIR

- A. Replace areas of severely damaged surfaces in accordance with manufacturer's recommendations.

3.4 SITE QUALITY CONTROL

- A. Non-Conforming Work: Replace damaged work which cannot be satisfactorily repaired, restored or cleaned, to satisfaction of Consultant at no cost to Owner.

3.5 CLEANING

- A. Remove excess adhesive and sealant from visible surfaces.
- B. Clean surfaces in accordance with manufacturer's "Care and Maintenance Instructions".

3.6 PROTECTION

- A. Provide protective coverings to prevent physical damage or staining following installation for duration of Project.
- B. Protect surfaces from damage until date of Substantial Performance of the Work.

END OF SECTION

SECTION 093000 TILE AND STONE SETTING MATERIALS AND ACCESSORIES

Part 1 - GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation materials.
- B. Setting materials.
- C. Adhesives and primers.
- D. Grout materials.
- E. Self-leveling underlayment.
- F. Waterproof membrane.
- G. Crack isolation membrane.
- H. Flexible sealant.
- I. Stone, tile, and grout maintenance, cleaners, and grout haze removers.

1.2 RELATED SECTIONS

- A. Section 03 38 00 - Post-Tensioned Concrete.
- B. Section 03 39 00 - Concrete Curing.
- C. Section 03 54 00 - Cast Underlayment.
- D. Section 03 54 00- Cast Underlayment.
- E. Section 04 20 00 - Unit Masonry.
- F. Section 05 40 00 - Cold-Formed Metal Framing.
- G. Section 05 42 00 - Cold-Formed Metal Joist Framing.
- H. Section 06 11 16 - Mechanically Graded Lumber.
- I. Section 06 11 00 - Sheating.
- J. Section 07 14 00 - Fluid-Applied Waterproofing.
- K. Section 07 60 00 - Flashing and Sheet Metal.
- L. Section 07 76 16 - Roof Decking Pavers.
- M. Section 07 92 13 - Cork Wall Coverings.
- N. Section 07 92 19 - Acoustic Sealants.

- O. Section 09 05 61.13 - Moisture Vapor Emission Control.
- P. Section 09 21 00 - Plaster and Gypsum Board Assemblies.
- Q. Section 09 22 16 - Non-Structural Metal Framing.
- R. Section 09 26 00 - Veneer Plastering.
- S. Section 09 28 00 - Backing Boards and Underlayments.
- T. Section 09 29 00 - Gypsum Board.
- U. Section 09 30 00 - Tiling.
- V. Section 09 30 33 - Stone Tiling.
- W. Section 09 34 00 - Waterproofing-Membrane Tiling.
- X. Section 09 31 33 - Thin-Set Stone Tiling.
- Y. Section 09 32 00 - Mortar-Bed Tiling.
- Z. Section 22 42 23 - Commercial Showers.

1.3 REFERENCES

- A. American National Standards Institute (ANSI) Installation Specifications:
 - 1. ANSI A108 Series - Installation Specifications.
 - 2. ANSI A108.11 - Interior Installation of Cementitious Backer Units.
 - 3. ANSI A108.13 - Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone.
 - 4. ANSI A108.14 - Paper-Faced Glass Mosaic Tile.
 - 5. ANSI A108.15 - Alternate Method: Installation of Paper-Faced Glass Mosaic Tile.
 - 6. ANSI A108.16 - Installation of Paper-Faced, Back-Mounted, Edge-Mounted, or Clear Film Face-Mounted Glass Mosaic Tile.
 - 7. ANSI A108.19 - Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs.
 - 8. ANSI A108.20 - Exterior Installation of Vertical and Overhead Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Improved Modified Dry-Set Cement Mortar.
- B. American National Standards Institute (ANSI) Material Specifications:
 - 1. ANSI A118 Series - Material Specifications.
 - 2. ANSI A118.9 - Cementitious Backer Units.
 - 3. ANSI A118.15 - Improved Modified Dry-Set Mortar.
 - 4. ANSI A136.1 - Organic Adhesives for Installation of Ceramic Tile.
 - 5. ANSI A137.1 - Ceramic Tile.
 - 6. ANSI A137.2 - Glass Tile.
 - 7. ANSI A137.3 - Gauged Porcelain Tile and Gauged Porcelain Tile Panels/Slabs.
- C. Green Squared American National Standards Institute (ANSI) Material Specifications:
 - 1. ANSI A138.1 - Sustainable Tiles, Glass Tiles, and Tile Installation Materials; Version 2.
- D. American Society for Testing and Materials International (ASTM):

1. ASTM A1064 - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
 2. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar. (Jobsite Mix)
 3. ASTM C150 - Standard Specification for Portland Cement. (Jobsite Mix)
 4. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars. (Using 2-inch [5-cm] Cube Specimens).
 5. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
 6. ASTM C616 - Standard Specification for Quartz-Based Dimension Stone.
 7. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members.
 8. ASTM C847 - Standard Specification for Metal Lath.
 9. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
 10. ASTM C1178/C1178M - Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel.
 11. ASTM C1186 - Standard Specification for Flat Fiber-Cement Sheets.
 12. ASTM C1193 - Standard Guide for Use of Joint Sealants.
 13. ASTM C1278 - Standard Specification for Fiber-Reinforced Gypsum Panel (Paragraph 6.1).
 14. ASTM C1288 - Standard Specification for Fiber-Cement Interior Substrate Sheets.
 15. ASTM C1325 (Type A) - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units.
 16. ASTM C1658/C1658M - Standard Specification for Glass Mat Gypsum Panels.
 17. ASTM C1396/C1396M - Standard Specification for Gypsum Board.
 18. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 19. ASTM D4397 - Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications.
- E. National Stone Institute (NSI):
1. Dimension Stone Design Manual.
- F. Tile Council of North America (TCNA):
1. Handbook for Ceramic Tile, Glass, and Stone Installation.
- G. Terrazzo Tile and Marble Association of Canada (TTMAC)
1. Specifications Guide 09 30 00 Tile Installation Manual.
- H. International Organization for Standardization (ISO):
1. ISO 13007 - Ceramic Tiles - Grout and Adhesives.
- I. Leadership in Energy and Environmental Design (LEED) - U.S. Green Building Council.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's technical information for each product specified.
- 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: Color charts for selection of grout.
- E. Manufacturer's Certificates: Certify that products meet or exceed specified requirements. When applicable, submit a Master Grade Certificate signed by the manufacturer and the installer certifying that products meet or exceed the specified requirements of ANSI A137.1, ANSI A137.2 and/or ANSI A137.3.
- F. Installation Instructions: Manufacturer's printed instructions for each product.
- G. Maintenance Data: Include recommended cleaning methods, cleaning materials, and maintenance coatings.

1.5 QUALITY ASSURANCE

- A. To ensure single-source warranty requirements and compatibility of products: Provide cleaners, sealing and maintenance products as well as tile grout, setting materials, underlayments, additives, accessories, and factory-prepared dry-set mortars from the same manufacturer.
- B. Installer Qualifications:
 - 1. For Mapeheat installations: Installer must be a MAPEI Registered Pro Installer or an nVent NUHEAT Certified Pro Installer.
 - 2. Engage an experienced installer who has completed tile installations similar in material, design, and extent to that indicated for this project and with a record of successful in-service performance. Installer to have a minimum of 5 years' experience.
 - 3. Installer is a Five-Star member of the National Tile Contractors Association or a Trowel of Excellence member of the Tile Contractors' Association of America.
 - 4. Installer's supervisor for the project holds the International Masonry Institute's Foreman Certification.
 - 5. Installer employs Ceramic Tile Education Foundation Certified Installers or installers recognized by the U.S. Department of Labor as Journeyman Tile Layers.
- C. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1.6 PRE-INSTALLATION CONFERENCE

- A. Convene one week prior to commencing work of this section.
- B. Require attendance of installation material manufacturer, tile supplier, tile installer and installers of related work. Review installation procedures and coordination required with related work.
- C. Meeting agenda includes but is not limited to:
 - 1. Tile and installation material compatibility.
 - 2. Grouting procedure.
 - 3. Maintenance and cleaning products and methods.
 - 4. Surface preparation.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Prevent damage or contamination to materials by

water, freezing, foreign matter and other causes.

- B. Protect setting materials from freezing and overheating in accordance with manufacturer's instructions.
- C. Store tile and setting materials on elevated platforms, under cover and in a dry location and protect from contamination, dampness, freezing and overheating.
- D. Do not use frozen materials unless specifically allowed by manufacturer.
- E. Deliver and store materials on site at least 24 hours before work begins.
- F. Provide heated and dry storage facilities on site.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Comply with requirements of referenced standards and recommendations of material manufacturers for environmental conditions before, during, and after installation.
- B. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.
- C. For Interior Applications:
 - 1. Do not begin installation until building is completely enclosed and maintains temperature and humidity conditions consistent with "after occupancy" conditions for a minimum of 2 weeks.
 - 2. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.
 - 3. Vent temporary heaters to exterior to prevent damage to tilework from carbon dioxide build-up.
 - 4. Maintain temperatures at not less than 50 degrees F (10 degrees C) in tiled areas during installation and for 7 days after completion unless higher temperatures are required by referenced installation standards or manufacturer's written instructions.
- D. For Exterior Applications:
 - 1. Build a temporary shelter and when needed use indirect auxiliary heaters to maintain an adequate temperature level in the working environment and surfaces.
 - 2. Exhaust temporary heaters to exterior to prevent damage to the work or injury to personnel from carbon monoxide emissions.
 - 3. Maintain substrate and ambient temperatures in tiled areas between 50 degrees F (10 degrees C) and 95 degrees F (35 degrees C) during installation and for at least 7 days after completion, unless otherwise indicated in the product instructions and/or ANSI A108 installation standards.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer:
- B. Requests for substitutions will be considered in accordance with provisions of Section

01 60 00 - Product Requirements.

- C. Substitutions: Permitted.

2.2 SURFACE PREPARATION MATERIALS

- A. Trowelable Floor/Wall Patch and Render Mortar: Quick-setting, polymer-modified, fiber-reinforced, cementitious rendering, patching, ramping and leveling mortar. Can be applied from 1/8 to 1-1/4 inches (3 to 3.2 cm).
 - 1. Product: MAPEI, Planitop 330 Fast.
- B. Trowelable Concrete Floor Patch: High-performance, fast-setting cementitious patching compound. Can be applied at 1/16 to 1-1/2 inches (1.5 mm to 3.8 cm) neat and from 1-1/2 to 3 inches (3.8 cm to 7.5 cm) neat in areas no larger than 24 square feet (2.23 sq m).
 - 1. Product: MAPEI, Mapecem Quickpatch.
- C. Concrete Repair Patch: Premixed cement-based mortar for concrete repairs, fast-setting, high compressive strength, can be applied at 1/4 inch to 4 inches (6 mm to 10 cm).
 - 1. Product: MAPEI, Mapecem Premix.
- D. Patching Compound: Fast-setting, polymer-modified patching compound, cement-based, high compressive strength, can be applied up to 1/2 inch (12 mm) with water, or 1/4 inch (6 mm) when mixed with diluted MAPEI, Planipatch Plus.
 - 1. Product: MAPEI, Planipatch.
- E. Skimcoating Compound: High-performance, polymer-modified, fiber-reinforced, cement-based, skimcoating and patching compound, can be applied at featheredge up to 1 inch (2.5 cm).
 - 1. Product: MAPEI, Planiprep SC.
- F. Moisture-Resistant Skimcoating Compound: Fast-drying, cement-based, fiber-reinforced, polymer-modified patch and skimcoating compound, can be applied at featheredge up to 1/2 inch (12 mm).
 - 1. Product: MAPEI, Planiprep PSC.
- G. Gypsum-Based Patching Compound: Repair minor holes, voids, and depressions in concrete, gypsum-based surfaces, or wood underlayments, and holes in drywall and plaster walls, can be applied up to 1/2 inch (12 mm).
 - 1. Product: MAPEI, Planitex UNS.

2.3 MORTAR BED / SCREED MORTARS / RENDER MORTAR MATERIALS

- A. Thick-Bed (Dry-Pack) and Render Mortar: Pre-blended polymer-modified, dry-pack, scratch coat and wall render, and concrete patch; can be applied at 1/4 inch to 2 inches (6 mm to 5 cm), ANSI A108.1B.
 - 1. Product: MAPEI, Modified Mortar Bed.
- B. Thick-Bed (Dry-Pack) Mortar: Rapid-setting, pre-blended, polymer-modified, cement-based, sloping mortar; can be applied at 1/4 inch to 3 inches (6 mm to 7.5 cm) and up to 5 inches (12.5 cm) in trenches, ANSI A108.1B.
 - 1. Product: MAPEI, Planislope RS.
- C. Thick-Bed (Dry-Pack) Mortar: Pre-blended mixture of finely graded sand and

Portland cement; can be applied at 3/8 inch to 3 inches (10 mm to 7.5 cm).

1. Product: MAPEI, 4 to 1 Mud Bed Mix.
 - a. With MAPEI, Planicrete AC (admixture), ANSI A108.1B.
- D. Accelerated-Cure Screed Mortar: Bonded and unbonded applications; can be applied at 1/4 inch to 2 inches (6 mm to 5 cm) neat and up to 4 inches (10 cm) when extended with 20 percent by weight of washed, clean, saturated surface-dry (SSD), 3/8-inch (10 mm) pea gravel.
 1. Product: MAPEI, Topcem Premix.
- E. Render Mortar: Quick-setting, polymer-modified, fiber-reinforced, cementitious rendering, patching, ramping and leveling mortar; can be applied from 1/8 inch to 1-1/4 inches (3 mm to 3.2 cm).
 1. Product: MAPEI, Planitop 330 Fast.

2.4 ADHESIVES AND PRIMERS

- A. Multipurpose Bond-Promoting Primer: Low-VOC, synthetic resin-based primer with bond-promoting silica aggregates suspended in a dispersion, for interior and exterior applications.
 1. Product: MAPEI, ECO Prim Grip.
- B. Textured Primer: Fast-drying, high-performance, low-VOC, textured primer for nonporous substrates.
 1. Product: MAPEI, Primer X.
- C. All-Purpose Primer: Low-odor, water-based acrylic primer for self-leveling underlayments, also suitable for a wide variety of porous and nonporous substrates.
 1. Product: MAPEI, Primer T.
- D. Concrete Primer: Advanced-technology, low-odor, low-VOC, acrylic latex primer for concrete, gypsum-based underlayments and patches.
 1. Product: MAPEI, Primer L.
- E. Epoxy Primer: High-performance, 100 -percent solids epoxy primer, low-odor, VOC-compliant (requires sand broadcast).
 1. Product: MAPEI, Primer E.
- F. Water-Based Epoxy Primer: Two-component, polymer-modified, water-based epoxy primer for self-leveling underlayments. It improves adhesion over smooth, nonabsorbent, and difficult-to-bond-to substrates and approved plywood subfloors.
 1. Product: MAPEI, Primer WE.
- G. Consolidating Epoxy Primer: Ultra low-viscosity, consolidating, for weak concrete or gypsum substrates, 100 percent solids epoxy primer.
 1. Product: MAPEI, Primer CE.
- H. Metal/Concrete/Wood Bonding Agent/Primer: Two-component, multipurpose, high-modulus, nonshrink, 100 percent solids and moisture-tolerant epoxy bonding agent.
 1. Product: MAPEI, Planibond EBA with sand broadcast.
- I. Ready-to-Use, Fast-Drying, Quick-Tacking, Water-Based, Pressure-Sensitive, Latex Primer: For use under MAPEI's peel-and-stick sheet membranes.
 1. Product: MAPEI, MAPEI SM Primer Fast.

- J. Ready-to-Use, Fast-Drying, Water-Based, Latex Primer: For use under MAPEI's peel-and-stick sheet membranes.
 - 1. Product: MAPEI, MAPEI SM Primer.
- K. Ready-to-Use, Low-VOC, Quick-Drying, High-Tack, Water-Based Primer: For Interior/Exterior applications under MAPEI's peel-and-stick sheet membranes, promotes adhesion to high-moisture substrates.
 - 1. Product: MAPEI, MAPEI HM Primer.
- L. Two-Component Reactive Adhesive: Excellent for bonding to properly prepared steel and plywood substrates, white, flexible, interior, and exterior, floors and walls, trowelable, two-component adhesive, suitable for most types of ceramic tile, moisture-sensitive tile, natural stone, and agglomerates, ISO 13007 R2.
 - 1. Product: MAPEI, Planicrete W.
- M. Adhesive Bond Coat for Sound-Reduction Membrane: Light tan, nonflammable adhesive.
 - 1. Product: MAPEI, Ultrabond ECO 420.
 - 2. Applications: Interior floors for the installation of recycled rubber sound-reduction membrane.
- N. Hybrid-Polymer-Based Adhesive for Gauged Porcelain Tile and Gauged Porcelain Tile Panels/Slabs: Single-component, non-sag performance with panels, instant grab and holding power, easy-to-trowel, moisture-cure, and hybrid-polymer-based adhesive technology.
 - 1. Product: MAPEI, Ultrabond ECO GPT.

2.5 SELF-LEVELING UNDERLAYMENTS

- A. Quick-Setting, Weather-Resistant, High-Compressive-Strength, Self-Leveling Underlayment: Advanced hydraulic, specially formulated for the resurfacing of interior horizontal surfaces where environmental controls are not in place, which can be applied in minimum uniform thickness of 1/8 inch to 1 inch (3 mm to 2.5 cm).
 - 1. Product: MAPEI, Ultraplan Extreme 2.
- B. Quick-Setting, Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic cement product that can be applied from 1/8 inch (3 mm) - the minimum thickness over highest point in floor - to 1 inch (2.5 cm).
 - 1. Product: MAPEI, Novoplan 2 Plus.
- C. Reduced-Preparation, Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic cement product that can be applied from 1/8 inch (3 mm) - the minimum thickness over highest point in floor - to 1 inch (2.5 cm).
 - 1. Product: MAPEI, Novoplan Easy Plus.
- D. Reduced-Preparation, Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic cement product that can be applied from feathered edge to 2 inches (5 cm).
 - 1. Product: MAPEI, Ultraplan Easy.

2.6 GROUT MATERIALS

- A. Standard Sanded Cement Grout: Sanded polymer-modified Portland-cement tile grout, fills joints from 1/8 inch to 5/8 inch (3 mm to 16 mm), ANSI A118.6 and ISO

13007 CG2WA.

1. Product: MAPEI, Keracolor S.
- B. Standard Unsanded Cement Grout: Unsanded polymer-modified Portland-cement tile grout, fills joints from 1/16 inch to 1/8 inch (1.5 mm to 3 mm), ANSI A118.6 and ISO 13007 CG2WA.
1. Product: MAPEI, Keracolor U.
- C. High-Performance Cement Grout: For grout joints from 1/16 inch to 3/4 inch (1.5 mm to 19 mm), ANSI A118.7 and ISO 13007 CG2WAF.
1. Product: MAPEI, Ultracolor Plus FA.
- D. High-Performance, Rapid-Setting Cement Grout, with Maximized Color Depth: For grout joints from 1/16 inch to 3/4 inch (1.5 mm to 19 mm), ANSI A118.7 and ISO 13007 CG2 WAF.
1. Product: MAPEI, Ultracolor Plus Max.
- E. Polymer Ready-to-Use Translucent Specialty Grout for Glass Tile: 'Iridescent effect' finish for grout joints from 1/16 inch to 1/2 inch (1.5 mm to 12 mm).
1. Product: MAPEI, MAPEI Flexcolor 3D.

2.7 WATERPROOF/CRACK ISOLATION MEMBRANES

- A. General: Manufacturer's standard product that complies with ANSI A118.10 and ANSI A118.12 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
1. Product: Subject to compliance with requirements, provide MAPEI materials.
- B. Flexible Polyethylene Sheet Membrane: Nonwoven, polypropylene fabric on both sides, used for both waterproofing and crack-isolation in interior/exterior residential and commercial applications, ANSI A118.10 and ANSI A118.12.
1. Product: MAPEI, Mapeguard WP 200.
 - a. With MAPEI, Mapeguard WP ST sealing tape.
 - b. With MAPEI, Mapeguard PIC pre-formed inside corner.
 - c. With MAPEI, Mapeguard POC pre-formed outside corner.
 - d. With MAPEI, Mapeguard PC pipe collar.
 - e. With MAPEI, Mapeguard VC valve collar.
- C. Fluid-Applied Membrane: Advanced liquid-rubber, extremely quick-drying, premium waterproofing, and crack-isolation membrane, IAPMO-listed, ANSI A118.10 and ANSI A118.12.
1. Product: MAPEI, Mapelastix AquaDefense.
 - a. With MAPEI, Reinforcing Fabric.
- D. Cementitious-Binder-Based Membrane: Rapid-drying, two-component, waterproofing and crack-isolation membrane, suitable for steam showers, IAPMO-listed, ANSI A118.10 and ANSI A118.12.
1. Product: MAPEI, Mapelastix Turbo.
 - a. With MAPEI, Reinforcing Fabric.

2.8 CRACK-ISOLATION MEMBRANES

- A. General: Manufacturer's standard product that complies with ANSI A118.12 for performance and is recommended by the manufacturer for the application

indicated. Include reinforcement and accessories recommended by manufacturer.

1. Product: Subject to compliance with requirements, provide products from MAPEI.
- B. Fabric-Reinforced, Modified-Bituminous Sheet Membrane: Self-adhering, modified-bituminous sheet with fabric reinforcement facing; 0.040 inch (1.01 mm) nominal thickness, membrane for use under tile that provides up to 3/8 inch (10 mm) protection from in-plane cracks: ANSI A118.12 and ANSI A118.13.
1. Product: MAPEI, Mapeguard 2.
 - a. Requires Primer: MAPEI, MAPEI SM Primer, or MAPEI, MAPEI SM Primer Fast, or MAPEI, MAPEI HM Primer.
- C. Fabric-Reinforced, Crack-Isolation Membrane: Flexible, Thin, Lightweight, Load-Bearing with fabric reinforcement facing; 1/16 inch (1.5 mm) nominal thickness, membrane for use under tile that provides up to 3/8 inch (10 mm) protection from in-plane cracks: ANSI A118.12.
1. Product: MAPEI, Mapeguard CI.
 - a. Requires Primer: MAPEI, MAPEI SM Primer, or MAPEI, MAPEI SM Primer Fast or MAPEI, MAPEI HM Primer.
- D. Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer. Flexible bonded crack-isolation membrane for use under tile that provides up to 1/8 inch (3 mm) protection from in-plane cracks. Fast-setting, flexible, thin, load-bearing: ANSI A118.12.
1. Product: MAPEI, Mapelastic CI.

2.9 UNCOUPLING MEMBRANE

- A. Underlayment Membrane: Uncoupling, lightweight, waterproofing, and vapor-pressure-equalizing underlayment membrane, ANSI A118.10 and ANSI A118.12(Section 5.1.3. and Section 5.2.3).
1. Product: MAPEI, Mapeguard UM.
 - a. Waterproofing requires sealing tape: MAPEI, Mapeguard ST.
- B. Uncoupling Heat Membrane: Lightweight uncoupling, crack-isolation, and waterproofing membrane for electrical floor heating.
1. Product: MAPEI, Mapeheat Membrane.
 - a. With MAPEI, Mapeheat Cable.
 - b. Waterproofing requires sealing tape: MAPEI, Mapeguard ST.

2.10 SOUND-REDUCTION MEMBRANE

- A. General: Manufacturer's standard product that complies with ANSI A118.13 for performance and is recommended by the manufacturer for the application indicated. Include primers and/or bond coat as recommended by manufacturer.
1. Product: Subject to compliance with requirements, provide MAPEI materials.
 2. Performance: IIC (Impact Insulation Class) minimum AIIC of 10 or greater per standard.
 3. Performance: IIC and STC (Sound Transmission Class) performance of 50 or better per building code.
- B. Crack Isolation and Sound Control: Flexible, thin, load-bearing, fabric reinforced, "peel-and-stick" crack-isolation and sound-reduction membrane, for use under tile, provides up to 3/8 inch (10 mm) protection from in-plane cracks, ANSI A118.12 and

ANSI A118.13, which requires primer.

1. Product: MAPEI, Mapesonic 2.
 - a. Requires Primer: MAPEI, MAPEI SM Primer, MAPEI, MAPEI SM Primer Fast, or MAPEI, MAPEI HM Primer.

2.11 STONE, TILE AND GROUT MAINTENANCE, CLEANERS AND GROUT HAZE REMOVERS

- A. Neutral-pH Cleaner: Highly concentrated, zero-VOC, for ceramic, porcelain, and natural-stone surfaces. Helps prevent soap scum buildup and hard water deposits.
 1. Product: MAPEI, UltraCare Concentrated Tile & Grout Cleaner.
- B. High-Alkaline Cleaner: Highly concentrated and degreaser that quickly removes waxes, grease, oil, light soap scum, mildew, and algae stains. For areas that have been neglected or subject to heavy use.
 1. Product: MAPEI, UltraCare Heavy-Duty Stone, Tile & Grout Cleaner.
- C. Abrasive Cleaner: Water-based, biodegradable, nontoxic, nonflammable and contains no VOCs or acids. Does not require letting the product stand or dwell on the surface for effective cleaning. Safe for use on ceramic, porcelain and natural-stone surfaces, light cementitious and epoxy grout residue. Excellent for use on heavily textured and hard-to-clean surfaces.
 1. Product: MAPEI, UltraCare Abrasive Surface Cleaner.
- D. Sulfamic Acid Crystals: Cleaner and problem-solver for nonporous, acid-resistant tile and natural stone. It removes cured cement grout haze, mortar residue, rust stains, and mineral deposits such as efflorescence.
 1. Product: MAPEI, UltraCare Sulfamic Acid Crystals.
- E. Epoxy Grout Haze Remover: Professional-strength, water-based formulation that helps remove epoxy grout haze from tile and natural-stone surfaces; natural citrus scent, non-flammable and easy to use.
 1. Product: MAPEI, UltraCare Epoxy Grout Haze Remover.
- F. Cement Grout Haze Remover: Professional-strength, water-based formulation that helps remove cement grout haze from tile, concrete and acid-resistant natural-stone surfaces; acidic, low-odor, and nonflammable.
 1. Product: MAPEI, UltraCare Cement Grout Haze Remover.

2.12 GROUT COLORANT

- A. Universal Grout Colorant and Sealer: Ready-to-use, water-based, polymer-modified colorant, and sealer for grout joints. Bonds to cement, epoxy, urethane, and acrylic grouts.
 1. Product: MAPEI, UltraCare Grout Refresh.

2.13 ACCESSORIES

- A. Metal lath: Expanded metal lath, carbon steel hot dip galvanized G-60 finish expanded metal flat diamond lath without paper backing. Meets ASTM C847.
- B. Plastic Lath: Lightweight, noncorroding, alkali-resistant synthetic lath used as a substitute for traditional metal lath.
 1. Product: MAPEI, Mapelath.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates for compliance with requirements for conditions affecting performance of the work. Refer to ANSI A108.01, ANSI A108.02 and if applicable ANSI A108.19 and/or ANSI A108.20.
- B. Do not proceed with tilework until surfaces and conditions comply with requirements indicated in reference tile installation standard and manufacturer's printed instructions.
- C. When underlayment, patching, leveling, and rendering materials are needed, they must be from the supplier of the setting materials. For improved warranty and single-source responsibility.
- D. When using tiles with all edges shorter than 15 inches (38 cm) in length, maximum allowable variation in the substrate - 1/4 inch (6 mm) in 10 feet (3.05 m) from the required plane, with no more than 1/16 inch (1.5 mm) variation in 12 inches (30 cm) when measured from the high points in the surface.
- E. When using large-format tiles with at least one edge of 15 inches (38 cm) in length, the maximum allowable variation in the substrate is 1/8 inch in 10 feet (3 mm in 3.05 m) from the required plane, and 1/16-inch variation in 24 inches (1.5 mm in 61 cm) when measured from the high points in the surface.
- F. When using stone tile, the maximum allowable variation in the substrate is 1/8 inch in 10 feet (3 mm in 3.05 m) from the required plane.

3.2 DETAILING / FLASHING

- A. All detailing and flashing must be completed prior to installation of field waterproofing membrane.
- B. All detailing and flashing must be installed per manufacturer's standard details.

3.3 MIXES

- A. General: Proportion and mix products, in clean containers, in accordance with manufacturer's most current written instructions and applicable ANSI standards.
 - 1. Do not add water, thinners, or additives unless recommended by manufacturer.
 - 2. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovel or trowel as unit of measure.
 - 3. Do not mix more materials than can be used within time limits recommended by manufacturer. Discard materials that have begun to set.

3.4 INSTALLATION

- A. When using Mapeheat Membrane and electric radiant-heat cables, provide Mapeheat floor-sensing thermostat or other Mapeheat controls with Class A GFCI protection.
- B. Install tile in accordance with manufacturer's printed instructions and the applicable requirements of ANSI A108 series for the materials being used.

- C. When underlayment, patching, leveling, and rendering materials are needed, they must be from the supplier of the setting materials. For improved warranty and single-source responsibility.
- D. When using self-leveling underlayment over uncoupling membrane or uncoupling heat membrane, adhere the uncoupling/uncoupling heat membrane to the concrete substrate using a rapid-setting modified mortar.
- E. Apply waterproof membrane only in dry weather, when ambient and substrate temperatures are above 40degrees F (4 degrees C).
- F. Waterproofing: Install necessary components to form a watertight installation. Dry film thickness (DFT) must comply with manufacturer's recommendations.
- G. Install tile using TCNA methods specified on the drawings.

3.5 GROUTING

- A. Grout joints in accordance with manufacturer's instructions and ANSI A108.06 and/or ANSI A108.10.
- B. Remove standing water, dust, and foreign substances from joints to be grouted.
- C. Clean and dry tile surfaces.
- D. After grouting, remove all grout residue promptly.

3.6 PROTECTION

- A. Floors: Protect from all traffic for at least 72 hours after installation.
 - 1. Do not step on floor for at least 24 hours; if traffic is unavoidable after that, use plywood stepping boards.
 - 2. Protect from heavy traffic for at least 7 days after installation.
 - 3. When fast-setting materials are used to allow faster occupancy, comply with the manufacturer's recommendations.
- B. Walls: Protect from impact, vibration, and heavy hammering on adjacent and opposite walls for at least 14 days after installation, unless manufacturer's instructions allow a shorter period.
- C. Protect finished tile surfaces from staining and discoloration until final inspection and acceptance.

END OF SECTION

SECTION 09 65 13.13 RESILIENT WALL BASE

PART 1 – GENERAL**1.1 GENERAL PROVISIONS**

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

1.2 SUMMARY

- A. Section includes:
 - i. Resilient Wall Base

1.3 SUBMITTALS, RELATED DOCUMENTS

- A. **General:** Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.
- B. **Product Data:** Submit manufacturers documentation for each material and accessory proposed for use (available at www.flexcofloors.com).
 - i. Technical data sheet
 - ii. Installation Instructions
 - iii. Care & Maintenance document
 - iv. Warranty
- C. **LEED Submittals:**
 - i. Product Data for Credit EQ 4.1: For adhesives, including printed statement of VOC content and chemical components.
- D. **Samples for Initial Selection:** For each type of product indicated.
- E. **Samples for Verification:** For each type of product indicated, in manufacturer's standard- size samples of each resilient product color, texture and pattern required.
- F. **Product Schedule:** For resilient products. Use same designations indicated on Drawings.

1.4 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** Provide resilient wall base materials manufactured in the United States of America by a firm with a minimum of 10 years' experience with resilient rubber materials of type equivalent to those specified.
- B. Provide resilient wall base, flooring materials, adhesives, accessories and subfloor preparation products from one manufacturer to ensure color matching and compatibility.
- C. Manufacturer shall be capable of providing technical training and technical field service representation.

1.5 RELATED WORK

- A. Installer must be professional, licensed, insured and acceptable to manufacturer of resilient flooring materials. Project Managers or Field Supervisors must be INSTALL (International Standards & Training Alliance) certified CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The

Flooring Contractors Association) CIM (Certified Installation Manager) for the requirements of the project or equivalent.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within the range recommended by Flexco of 65 degrees F (18 degrees C) and 85 degrees F (29 degrees C).

1.7 PROJECT CONDITIONS

- A. Install resilient products after other finishing operations, including painting, have been completed.
- B. Maintain ambient temperatures within range of (\pm 10 degrees) 65 degrees F (18 degrees C) and 85 degrees F (29 degrees C) in the spaces to receive the resilient products during:
 - i. 48 hours before installation.
 - ii. During installation.
 - iii. 48 hours after installation.
- C. Maintain relative humidity between 40% and 65% during installation.
- D. Avoid conditions in which dew point causes condensation on the installation surface.

1.8 WARRANTY

- A. Provide manufacturer's standard limited commercial warranty to cover manufacturing defects.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design: Flexco Floors | 1401 East 6th Street | Tuscumbia, AL 35674 | P: (800) 633-3151
- B. Substitutions: Substitutions permitted

2.2 PRODUCTS

- A. FLEXCO WALLFLOWERS THERMOSET RUBBER (TS) WALL BASE - specify rubber wall base with the following characteristics: **Meets the performance requirements for the following Industry Standards:**
 - i. ASTM F1861, Standard Specification for Resilient Wall Base, Type TS (rubber, vulcanized thermoset), Group 1 (solid, homogeneous)
 - ii. Style: Cove
 - iii. Specify size by name and description: Flexco Wallflowers Rubber Wall Base: 'Cove': [4"]
 - iv. Specify size by name and description: Flexco Wallflowers Wall Base: [120' length rolls]
 - v. Specify Color by Color Name and Number: *(remove all but the color selecting)*: Color TBS by Interior Designer
 - vi. ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials, Class A

- vii. ASTM E648 (NFPA 253), Standard Test Method for Critical Radiant Flux, Class 1, >0.45 W/cm²
- viii. ASTM E662 (NFPA 258), Standard Test Method for Smoke Density, Passes, <450
- ix. ASTM F137, Standard Test Method for Flexibility of Resilient Flooring Materials protocols, Passes
- x. ASTM F925, Standard Test Method for Resistance to Chemicals of Resilient Flooring, Excellent
- xi. ASTM F1515, Standard Test Method for Measuring Light Stability of Resilient Flooring protocols, Passes
- xii. NFPA 253, Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source
- xiii. NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials
- xiv. NFPA 258, Test Method for Specific Density of Smoke Generated by Solid Materials
- xv. WALLFLOWERS TS RUBBER WALL BASE is SCS FloorScore® Certified and meets California Specifications Section 01350
- xvi. WALLFLOWERS TS RUBBER WALL BASE and accessories do not contain chemicals that may be hazardous to human health
- xvii. WALLFLOWERS TS RUBBER WALL BASE meets NSF 332 Gold Criteria
- xviii. WALLFLOWERS TS RUBBER WALL BASE meets CHPS Criteria
- xix. WALLFLOWERS TS RUBBER WALL BASE is manufactured in the U.S.A.
- xx. WALLFLOWERS TS RUBBER WALL BASE is manufactured in a Facility that is ISO 14001 Certified
- xxi. WALLFLOWERS TS RUBBER WALL BASE is free of materials known to be teratogenic, mutagenic or carcinogenic
- xxii. WALLFLOWERS TS RUBBER WALL BASE is free of Halogens
- xxiii. WALLFLOWERS TS RUBBER WALL BASE is free of Asbestos
- xxiv. WALLFLOWERS TS RUBBER WALL BASE is free of Phthalates
- xxv. WALLFLOWERS TS RUBBER WALL BASE is free of Heavy Metals

2.3 INSTALLATION AND MAINTENANCE MATERIALS

- A. Substrate/Background Preparation Products: Adhesives: Adhesives should be selected based on the site conditions and use of the space being installed.
- B. Recommended Adhesive Products:
 - i. Excelsior WB-600 Acrylic Wall Base Adhesive provided by Flexco
 - a. Unit Size: 30 oz. cartridge, 1 Gallon & 4 Gallon
 - b. Coverage: 30 – 70 linear feet per cartridge, 180 – 340 linear feet per gallon
 - c. Standard installations over porous backgrounds

- d. 100 % solids, solvent free and low VOCs
 - e. Hard set adhesive adding to dimensionally stable materials
 - f. Excellent sheer strength
- ii. Excelsior C-630 Contact Adhesive provided by Flexco
 - a. Unit Size: 1 Quart
 - b. Coverage: 20 – 40 Square Feet per unit / 120 – 140 Linear Feet per unit
 - c. Standard installations over porous and non-porous substrates
 - d. Hard set adhesive adding to dimensionally stable materials
 - e. Excellent sheer strength
 - f. Superior bond strength
 - g. Great for environments with topical moisture
- C. **Accessories:** Items needed to complete the installation. Recommended accessory products:
 - i. Flexco Factory Inside Corners
 - ii. Flexco Factory Outside Corners
 - iii. Flexco Factory Rubber Corner Blocks
 - iv. Flexco Factory Mini-Rubber Corners
 - v. Color-matched Caulks
- D. **Maintenance Materials:** Proper maintenance of the installation is critical to the long term performance of the rubber wall base products being specified. Using the appropriate chemicals to maintain the product according to the environment in which it is specified is critical. Recommended maintenance products:
 - i. Excelsior NC-900, All-Purpose Neutral pH Cleaner provided by Flexco
 - a. For initial maintenance
 - b. For daily and routine maintenance
 - ii. Excelsior CM-910, Cleaner / Maintainer provided by Flexco
 - a. For initial maintenance
 - b. For daily and routine maintenance
 - iii. Excelsior FR-920, Finish Remover provided by Flexco
 - a. For routine maintenance

PART 3 – EXECUTION

3.1 GENERAL

- A. **General Contractor Responsibilities:**
 - i. Supply a safe, climate controlled building as detailed in Flexco Technical Data Sheets.
 - ii. Ensure substrate/background meets the requirements of ASTM F1861, Flexco Technical Data Sheets and Excelsior Technical Data Sheets.

- iii. Provide a secure storage area that is maintained permanently or temporarily at normal operating temperature and humidity conditions between 65 degrees F and 85degrees F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the wall base, so the contractor can acclimate the rubber base materials per manufacturer's instructions.
- iv. Provide an installation area that is weather tight and maintained either permanently or temporarily at ambient service temperature and humidity. Normal operating temperature and humidity conditions are between 65degrees F and 85degrees F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the wall base per the manufacturer's instructions.
- v. Ensure areas with direct prolonged exposure to sunlight are protected with protective UVA/UVB restrictive coatings or films.
- vi. In areas where the walls are subject to direct sunlight through doors or windows, the doors and windows should be covered using blinds, curtains, cardboard or similar for the time of the installation and 72-hours after the installation to allow the adhesive to cure. Note: These areas should be installed using wet adhesives only.
- vii. Conduct initial maintenance prior to final usage per the Flexco Care & Maintenance Documents. Do not conduct initial maintenance until adhesive has cured per the adhesive technical data.
- viii. Provide trained installers that are professional, licensed, insured and acceptable to manufacturer of resilient rubber wall base materials.
- ix. Ensure installers or installation teams meet one of the following requirements:
 - a. Have completed INSTALL (International Standards & Training Alliance)
 - b. CFI (Certified Floorcovering Installers) training programs
 - c. Certified by INSTALL or CFI.
 - d. Are being supervised by Project Managers or Field Supervisors that are INSTALL (International Standards & Training Alliance) certified, CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager).
- x. Follow all requirements in the appropriate Flexco and/or Excelsior Technical Data Sheets, Care & Maintenance Documents, Warranties and other technical documents or instructions.

3.2 EXAMINATION

- A. **General:** Follow guidelines laid out in Division 01, Section 01 71 00 – Examination and Preparation, as well as Section 01 43 00 – Quality Assurance.

- B. **Verification of Conditions:** Inspect all substrates/backgrounds to ensure they are clean, smooth, permanently dry, structurally sound and without voids. Confirm all areas are properly sealed and acclimated per manufacturer's requirements.
- C. **Verification of Products:** In accordance with manufacturer's installation requirements, visually inspect material for size, style, color or visual defects prior to installing. Any material that is incorrect or visually defective shall not be installed.

3.3 SUBSTRATE/BACKGROUND PREPARATION

- A. **General:** Follow guidelines laid out in Division 01, Section 01 71 00 – Examination and preparation. All work required ensuring substrate/background meets manufacturers' guidelines are the responsibility of the general contractor.
- B. **Preparation:** Ensure substrate/background meets the requirements of ASTM F1861 for resilient wall base and/or Flexco Technical Data Sheets and Excelsior Technical Data Sheets.
 - i. Substrates/backgrounds must be free of visible water or moisture, dust, sealers, paint, residual adhesives and adhesive removers, solvents, wax, oil, grease, mold, mildew and any other extraneous coating, film, material or foreign matter.
 - ii. Acclimate all products to be used during the installation and the installation environment prior to installation according to the manufacturers written instructions.
 - iii. Fill cracks, holes, depressions and irregularities in the substrate/background to prevent transferring through to the surface of the resilient wall base.

3.4 INSTALLATION

- A. **General:** Follow all relevant guidelines detailed in Division 01, as well as wall base and adhesive manufacturer's technical data sheets.
- B. **Resilient Rubber Wall Base:** Install material in accordance with manufacturer's recommendations.
 - i. Select the appropriate adhesive for the application and job site conditions.
 - ii. Install material according to roll sequence or with like run numbers.
 - iii. Ensure material is rolled appropriately into the adhesive using a hand roller.

3.5 CLEANING & MAINTENANCE

- A. **General:** Clean up installation area and vacuum dust or wipe material to remove any dirt, dust or debris.
- B. **Initial Maintenance:** Conduct initial maintenance per the manufacturer's recommended procedures stated in the Maintenance Documents. All documentation is available upon request or from the Flexco website: www.flexcofloors.com.
- C. **Regular Maintenance:** Excelsior Cleaning products are the recommended products for use when performing maintenance. All can be found linked to the product on the Flexco website or at www.excelsiorproducts.net.

Conduct maintenance on regular intervals as needed. Insufficient cleaning will reduce the wear life of the wall base and alter the aesthetic properties of the wall base. The amount of maintenance depends directly upon the amount of dirt and particulates the area is subjected to.

3.6 CLOSEOUT ACTIVITIES

- A. **General:** Follow all federal, state and local requirements and Division 01 Section 01 76 00 – Protecting Installed Construction and Section 01 78 00 – Closeout Submittal requirements for these activities, protecting installed construction.
- B. **Protection:** Protect newly installed material from damage by other trades. Be sure all construction debris is picked up and vacuumed or removed prior to leaving the area. Limit usage and foot traffic according to the adhesive's requirements. When moving appliances or heavy furniture, protect wall base from scuffing and tearing using temporary floor protection as well.

END OF SECTION

SECTION 096519 LUXURY VINYL TILE

PART 1 – GENERAL

1.01 THIS SECTION INCLUDES

- A. Flooring and accessories as shown on the drawings and schedules and as indicated by the requirements of this section.

1.02 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract (including General and Supplementary Conditions and Division 1 sections) apply to the work of this section.

1.03 RELATED SECTIONS

- A. Other Division 9 sections for floor finishes related to this section but not the work of this section.
- B. Division 3 Concrete; not the work of this section.
- C. Division 6 Wood and Plastics; not the work of this section.
- D. Division 7 Thermal and Moisture Protection; not the work of this section.

1.04 QUALITY ASSURANCE AND REGULATORY REQUIREMENTS

- A. Select an installer who is competent in the installation of Mannington solid vinyl flooring with acrylic adhesive or two part epoxy.
- B. If required, provide resilient flooring and accessories supplied by one manufacturer, including leveling and patching compounds, and adhesives.
- C. If required, provide flooring material to meet the following fire test performance criteria as tested by a recognized independent testing laboratory:
 - a. ASTM E 648 Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I.
 - b. ASTM E 662 (Smoke Generation) Maximum Specific Optical Density of 450 or less.

1.05 SUBMITTALS

- A. Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions (latest edition of "Mannington's Professional Installation Guide,") for flooring and accessories.
- B. Submit the manufacturer's standard samples showing the required colors for flooring and applicable accessories.
- C. If required, submit the manufacturer's certification that the flooring has been tested by an independent laboratory and complies with the required fire tests.

1.06 ENVIRONMENTAL CONDITIONS

- A. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.

- B. Store materials in a clean, dry, enclosed space off the ground, and protected from the weather and from extremes of heat and cold. Protect adhesives from freezing. Store flooring, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.
- C. Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65°F (18°C) and a maximum temperature of 85°F (29°C) for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, maintain a minimum temperature of 55°F (13°C) and a maximum temperature of 85°F (29°C) in areas where work is completed. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating appliances.
- D. Install flooring and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during the installation of the flooring. Do not install flooring over concrete slabs until they are sufficiently dry to achieve a bond with the adhesive, in accordance with the manufacturer's recommended bond and moisture tests.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Basis-of-Design: RESILIENT FLOORING MATERIALS - Provide **Amtico Signature Collection** Abstract by Mannington Mills, Inc.
- B. Substitutions: Substitutions permitted
- A. Products:
 - i. Construction - Luxury Vinyl Tile & Plank, Non-orthophthalate
 - ii. Overall Thickness - 0.098 inches (2.5 mm)
 - iii. Wearlayer Thickness – 40 mil (1.0 mm)
 - iv. Finish Layer – Quantum Guard Elite
 - v. Edge Treatment – Micro-Bevel
 - vi. Sizes – Multiple, as specified. See floor pattern for design.
 - vii. Specification (ASTM F-1700) - Class III, Type B
- B. Testing:
 - i. HUD/FHA - Passes
 - ii. Flexibility (ASTM F137) - Passes - 1" Mandrel - No Crack/Break

- iii. Dimensional Stability (ASTM F2199) - Passes - Max 0.020 in/lin ft
- iv. Squareness (ASTM F540) - Passes - Max 0.010"
- v. Static Load (ASTM F970 mod.) - Passes - 2,000 PSI; Residual Indent ≤ 0.005 "
- vi. Residual Indentation (ASTM F1914) - Passes - $< 8\%$ Avg / 10% Single Value
- vii. Flooring Radiant Panel (ASTM E648) - Passes - Class 1; ≥ 0.45 watts/cm²
- viii. Smoke Density (ASTM E662) - Passes - ≤ 450
- ix. Slip Resistance (ASTM C1028) - Passes - ≥ 0.5 Leather; 0.6 Rubber
- x. Resistance to Light (ASTM F1515) - Passes
- xi. Chemical Resistance (ASTM F925) - Passes
- xii. Resistance to Heat (ASTM F1514) - Passes

C. Environmental:

- i. Indoor Air Quality - FloorScore Certified; CDPH v1.1-2010
- ii. Product Declarations – EPD, HPD
- iii. Rapidly Renewable Content – Contains 3% rapidly renewable resource content
- iv. LEED Scoreboard - LEED 2009: IEQ4.1 Low Emitting Adhesives; IEQ4.3 Low Emitting Materials – Flooring; LEED v4: Building Product Disclosure & Optimization - EPDs; IEQc2 - Low Emitting Materials
- v. mindful Materials - Visit mM Origin website, mindfulmaterials.origin.build, for current transparency information
- vi. Manufacturing – Madison, GA (USA) - ISO 14001 EMS & ISO 9001 QMS Registered

D. Warranty: Limited 25 Year Commercial & 25 Year Finish Coat Warranty

2.02 ADHESIVES

- A. Provide Amtico Amtico PS Flooring Adhesive under the flooring.
- B. MR-101 Wall Base Adhesive at the wall base as recommended by manufacturer.

2.03 ACCESSORIES

- A. For patching, smoothing, and leveling monolithic subfloors (concrete, terrazzo, quarry tile, ceramic tile, and certain metals), provide Portland Cement-Based Underlayment.
- B. For sealing joints between the top of wall base or integral cove cap and irregular wall surfaces such as masonry, provide plastic filler applied according to the manufacturer's recommendations.
- C. LVT must have the ability to be chemically welded to adjoining broadloom carpet

materials.

- D. Provide transition/reducing strips tapered to meet abutting materials.
- E. Provide threshold of thickness and width as shown on the drawings.
- F. Provide resilient edge strips of width shown on the drawings, of equal gauge to the flooring, homogeneous vinyl or rubber composition, tapered or bullnose edge, with color to match or contrast with the flooring, or as selected by the Architect from standard colors available.
- G. Provide [vinyl] [rubber] [metal] edge strips of width shown on the drawings and of required thickness to protect exposed edges of the flooring. Provide units of maximum available length to minimize the number of joints. Use butt-type edge strips for concealed anchorage or overlap-type edge strips for exposed anchorage.
- H. Provide appropriate "Expanded Technologies" felt floor protectors for chairs, furniture etc. A full range of appropriate items will be supplied by the Flooring Contractor to the end user or Architect for final approval. Floor protectors to be installed by the flooring contractor at the discretion of the GC or owner.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.
- B. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.
- C. Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.
- D. Failure to call attention to defects or imperfections will be construed as acceptance and approval of the subfloor. Installation indicates acceptance of substrates with regard to conditions existing at the time of installation.

3.02 PREPARATION

- A. Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps,

and filling low spots, control or construction joints, and other defects with Portland Cement-Based Underlayment as recommended by the flooring manufacturer.

- B. Remove paint, varnish, oils, release agents, sealers, and waxes. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds. Avoid organic solvents.
- C. Perform subfloor Relative Humidity and/or Calcium Chloride Tests, pH Tests, and Bond Tests as described in "Amtico Installation Guide," to determine if surfaces are dry, free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. Maximum levels to be determined based on adhesive choice and manufacturer's published installation instructions.
- D. Vacuum or broom-clean surfaces to be covered immediately before the application of flooring. Make subfloor free from dust, dirt, grease, and all foreign materials.

3.03 INSTALLATION OF FLOORING

- A. Install flooring in strict accordance with "Mannington's Professional Installation Guide" and any other product specific published installation instructions.
- B. Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.
- C. If required, install flooring on pan-type floor access covers. Maintain continuity of color and pattern within pieces of flooring installed on these covers. Adhere flooring to the subfloor around covers and to covers.
- D. Scribe, cut, and fit to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets.
- E. Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's instructions. Observe the recommended adhesive trowel notching, open times, and working times.

3.04 INSTALLATION OF ACCESSORIES

- A. Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths as long as practical, with inside corners fabricated from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces.
- B. Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.
- C. Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring

that would otherwise be exposed.

- D. Apply [butt-type] [overlap] edge strips where shown on the drawings, [before] [after] flooring installation. Secure units to the substrate, complying with the edge strip manufacturer's recommendations.

3.05 CLEANING AND PROTECTION

- A. Perform initial maintenance according to the latest edition of the manufacturer's maintenance and warranty literature. Protect installed flooring as recommended by the flooring manufacturer against damage from rolling loads, other trades, or the placement of fixtures and furnishings.
- B. Do not wax, polish, seal or apply other finishes to the installed flooring unless specifically directed by end user.
- C. Use Expanded Technologies felt floor protectors that are guaranteed not to delaminate or separate as a result of the manufacturing process.

END OF SECTION

SECTION 099000 INTERIOR, EXTERIOR AND HIGH-PERFORMANCE PAINTS AND COATINGS

Part 1 - GENERAL

1.1 SECTION INCLUDES

- A. Interior paint and coating systems (LEED-V4 and V4.1) including surface preparation.
- B. Interior paint and coating commercial systems including surface preparation.
- C. Interior paint and coating healthcare systems including surface preparation.
- D. Interior high-performance paint and coatings systems including surface preparation.
- E. Exterior high-performance paint and coatings systems including surface preparation.
- F. Exterior paint and coating systems including surface preparation.

1.2 REFERENCES

- A. Steel Structures Painting Council (SSPC):
 - 1. SSPC-SP 1 - Solvent Cleaning.
 - 2. SSPC-SP 2 - Hand Tool Cleaning.
 - 3. SSPC-SP 3 - Power Tool Cleaning.
 - 4. SSPC-SP5/NACE No. 1, White Metal Blast Cleaning.
 - 5. SSPC-SP6/NACE No. 3, Commercial Blast Cleaning.
 - 6. SSPC-SP7/NACE No. 4, Brush-Off Blast Cleaning.
 - 7. SSPC-SP10/NACE No. 2, Near-White Blast Cleaning.
 - 8. SSPC-SP11, Power Tool Cleaning to Bare Metal.
 - 9. SSPC-SP12/NACE No. 5, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating.
 - 10. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete.
- B. Material Safety Data Sheets / Environmental Data Sheets: Per manufacturer's MSDS/EDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.
- C. California Department of Public Health (CDPH):
 - 1. CDPH v1.1-2010 and V1.2-2017

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: For each paint system indicated, including.
 - 1. Product characteristics.
 - 2. Surface preparation instructions and recommendations.
 - 3. Primer requirements and finish specification.
 - 4. Storage and handling requirements and recommendations.
 - 5. Application methods.
 - 6. Cautions for storage, handling and installation.

- C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's products, colors and sheens available.
- D. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.
- E. Coating Maintenance Manual: Upon conclusion of project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams, "Custodian Project Color and Product Information" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.
- F. Only submit complying products based on project requirements (i.e. LEED). One must also comply with the regulations regarding VOCs (CARB, OTC, SCAQMD, LADCO). To ensure compliance with district regulations and other rules, businesses that perform coating activities should contact the local district in each area where the coating will be used.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A firm or individual experienced in applying paints and coatings 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.
- B. Paint exposed surfaces. If a color of finish, or a surface is not specifically mentioned, Architect will select from standard products, colors and sheens available.
- C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels unless indicated.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish surfaces for verification of products, colors and sheens.
 - 2. Finish area designated by Interior Designer.
 - 3. Provide samples that designate primer and finish coats.
 - 4. Compatibility and Adhesion: Check after one week of drying and curing by testing in accordance with ASTM D3359; Adhesion by tape test. If coating system is incompatible, additional surface preparation up to and including complete removal may be required.
 - 5. Do not proceed with remaining work until the Architect/Interior Designer approves the mock-up.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information.
 - 1. Product name, and type (description).
 - 2. Application and use instructions.
 - 3. Surface preparation.
 - 4. VOC content.

- 5. Environmental handling.
 - 6. Batch date.
 - 7. Color number.
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
 - C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
 - D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.6 PROJECT CONDITIONS

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

1.7 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
- B. Furnish Owner with an additional one percent of each material and color, but not less than 1 gal (3.8 l) or 1 case, as appropriate.

Part 2 - PRODUCTS

2.0 MANUFACTURERS

- A. Acceptable Manufacturer: Sherwin-Williams, which is located at: 101 Prospect Ave.; Cleveland, OH 44115; ASD Toll Free Tel: 800-524-5979; Tel: 216-566-2000; Fax: 440-826-1989; Email: request info specifications@sherwin.com; Web: www.swspecs.com.
- B. Substitutions: Permitted.

2.1 APPLICATIONS/SCOPE

- A. Interior Paint and Coating Commercial Systems:
 - 1. Concrete: Poured, precast, tilt-up, cast-in-place, cement board, plaster.
 - 2. Concrete: Non-vehicular floors.
 - 3. Masonry: Concrete masonry units, including split-face, scored, and smooth block.
 - 4. Metal: Aluminum, galvanized steel.
 - 5. Metal: Structural steel, joists, trusses, beams, partitions and similar items.
 - 6. Wood: Walls, ceilings, doors, trim and similar items.
 - 7. Drywall: Drywall board, Gypsum board.
- B. High Performance Interior Paint and Coating Systems:
 - 1. Concrete: Poured, precast, tilt-up, cast-in-place, cement board, plaster
 - 2. Concrete: Exposed ceilings.
 - 3. Masonry: Concrete masonry units, including split-face, scored, and smooth

block.

4. Metal: Aluminum, galvanized steel.
5. Metal: Structural steel, joists, trusses, beams, partitions and similar items.
6. Wood: Walls, ceilings, doors, trim and similar items.
7. Drywall: Drywall board, Gypsum board.

2.2 PAINT MATERIALS - GENERAL

A. Paints and Coatings:

1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color. Or follow manufactures product instructions for optimal color conformance.

B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

C. Coating Application Accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.

D. Color: Refer to Finish Schedule for paint colors, and as selected.

2.3 INTERIOR PAINT AND COATING COMMERCIAL SYSTEMS

A. Concrete: Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place including Plaster Walls and Ceilings.

1. Latex Systems:

- a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series (6.0 mils wet, 2.5 mils dry per coat).
- b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series (4 mils wet, 1.5 mils dry per coat).
- c. Semi-Gloss Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series (4 mils wet, 1.6 mils dry per coat).
- d. Semi- Gloss Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry)

- 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series:
- 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series (4 mils wet, 1.2 mils dry per coat).
- e. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series (4 mils wet, 1.7 mils dry per coat).
- f. Eg-Shel / Satin Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series (4 mils wet, 1.7 mils dry per coat).
- g. Eg-Shel/Satin Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).
- h. Low Sheen Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series (4 mils wet, 1.6 mils dry per coat).
- i. Low Sheen Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series (4 mils wet, 1.6 mils dry per coat).
- j. Flat Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series (4 mils wet, 1.6 mils dry per coat).
- k. Flat Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series (4 mils wet, 1.4 mils dry per coat).
- 2. Alkyd Systems; Waterbased:

- a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4 mils wet, 1.7 mils dry per coat).
- b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, L LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- c. Low Sheen Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- 3. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (8 mils wet, 3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45- Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45- Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5 mils wet, 2.0 mils dry per coat).
- B. Concrete Ceilings: Poured Concrete, Precast Concrete, Cement Board, and Cast-In-Place including Plaster Ceilings.
 - 1. Dryfall Waterborne Topcoats:
 - a. Semi-Gloss Finish:

- 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series (5.8 mils wet, 2.3 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6 mils wet, 1.9 mils dry per coat).
 - c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6 mils wet, 1.7 mils dry per coat).
- C. Masonry CMU: Concrete, Split Face, Scored, Smooth, High Density, Low Density, and Fluted.
 - 1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Gloss Acrylic Coating, B66-600 Series (6.0 mils wet, 2.5 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series (4 mils wet, 1.5 mils dry per coat).
 - c. Semi-Gloss Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series (4 mils wet, 1.6 mils dry per coat).
 - d. Semi-Gloss Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series.
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series (4 mils wet, 1.2 mils dry per coat).
 - e. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series (4 mils wet, 1.7 mils dry per coat).
 - f. Eg-Shel / Satin Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series (4 mils wet, 1.7 mils dry per coat).

- g. Eg-Shel/Satin Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).
- h. Low Sheen Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series (4 mils wet, 1.6 mils dry per coat).
- i. Low Sheen Finish: High Performance (HP) Upgrade
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series.
 - 3) 3rd Coat: S-W 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1950 Series (4 mils wet, 1.6 mils dry per coat).
- j. Flat Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series.
 - 2) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series (4 mils wet, 1.6 mils dry per coat).
- k. Flat Scuff Resistant Waterbase Enamel.
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series (4 mils wet, 1.4 mils dry per coat).
- 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- 3. Epoxy Systems; Waterbased:
 - a. Gloss Finish:

- 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45- Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45- Series (4.0 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Loxon Block Surfacer, LX01W200 (50-100 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
- E. Metal: Aluminum and Galvanized.
1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
 - b. Semi-Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
 - c. Eg-Shel / Satin Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).
 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:

- 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
- 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
- 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- c. Low Sheen Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
3. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45- Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45- Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
4. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Waterbased Acrolon 100, B65-720 series.
 - 3) 3rd Coat: S-W Waterbased Acrolon 100, B65-720 series (4.0 mils wet, 2.0 mils dry per coat).
 - b. Gloss Finish Single Component:

- 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet. 1.9-3.8 mils dry per coat).
- F. Metal; Galvanized: Ceilings and Duct work.
1. Dryfall Waterborne Topcoats:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series (5.8 mils wet, 2.3 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6.0 mils wet, 1.9 mils dry per coat).
 - c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6.0 mils wet, 1.7 mils dry per coat).
- G. Metal: Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous and Ornamental Iron, Structural Iron, and Ferrous Metal.
1. Latex Systems:
 - a. Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0.0 mils dry per coat).
 - b. Semi-Gloss Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
 - c. Eg-Shel / Satin Finish High Performance:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).
 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel

- Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- 3. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45- Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45- Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
- 4. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Waterbased Acrolon 100, B65-720 Series.
 - 3) 3rd Coat: S-W Waterbased Acrolon 100, B65-720 Series (4.0 mils

- wet, 2 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet. 1.9-3.8 mils dry per coat).
- 5. Drywall Waterborne Topcoat:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-83 Series (5.8 mils wet, 2.3 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-182 Series (6.0 mils wet, 1.9 mils dry per coat).
 - c. Flat Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall, B42-181 Series (6.0 mils wet, 1.7 mils dry per coat).
- H. Wood: Walls, ceilings, doors, and trim.
 - 1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W ProClassic Waterborne Acrylic Gloss, B21-51 Series.
 - 3) 3rd Coat: S-W ProClassic Waterborne Acrylic Gloss, B21-51 Series (4 mils wet, 1.5 mils dry per coat).
 - b. Semi - Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss, B31 Series.
 - 3) 3rd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss, B31 Series (4 mils wet, 1.3 mils dry per coat).
 - c. Semi - Gloss Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series (4 mils wet, 1.2 mils dry per coat).

- d. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W ProClassic Waterborne Acrylic Satin, B20 Series.
 - 3) 3rd Coat: S-W ProClassic Waterborne Acrylic Satin, B20 Series (4 mils wet, 1.2 mils dry per coat).
- e. Eg-Shel / Satin Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111. (4 mils wet, 1.8 mils dry)
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).
- f. Flat Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111. (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-2600 Series (4 mils wet, 1.6 mils dry per coat).
- g. Flat Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W8111. (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series.
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series: 4 mils wet, 1.4 mils dry per coat.
- 1. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Premium Wood and Wall Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Premium Wood and Wall Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W Premium Wood and Wall Primer, B28W8111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- 3. Stain and Varnish System:
 - a. Gloss Finish:
 - 1) 1st Coat: SW Minwax Performance Series Tintable Wood Stain 250 VOC.

- 2) 2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane.
 - 3) 3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane (4 mils wet, 1.0 mil dry per coat).
 - b. Satin Finish:
 - 1) 1st Coat: SW Minwax Performance Series Tintable Wood Stain 250 VOC.
 - 2) 2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane.
 - 3) 3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane (4 mils wet, 1.0 mil dry per coat).
- I. Drywall: Walls, Ceilings, Gypsum Board and similar items.
- 1. Latex Systems:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W ProMar200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series (4 mils wet, 1.5 mils dry per coat).
 - b. Semi-Gloss Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W ProMar200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series (4 mils wet, 1.6 mils dry per coat).
 - c. Semi-Gloss Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: S-W ProMar200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series:
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Semi-Gloss, S26-50 Series (4 mils wet, 1.2 mils dry per coat).
 - d. Eg-Shel / Satin Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series (4 mils wet, 1.7 mils dry per coat).
 - e. Eg-Shel / Satin Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1950 Series (4 mils wet, 1.7 mils dry per coat).
 - f. Eg-Shel Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry per coat).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series.
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Eg-Shel, S24-50 Series (4 mils wet, 1.2 mils dry per coat).

- g. Low Sheen Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Egshel, B41-2600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Egshel, B41-2600 Series (4 mils wet, 1.6 mils dry per coat).
- h. Low Sheen Finish: High Performance (HP) Upgrade.
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Egshel, B41-1950 Series.
 - 3) 3rd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Egshel, B41-1950 Series (4 mils wet, 1.6 mils dry per coat).
- i. Flat Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series.
 - 3) 3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series (4 mils wet, 1.6 mils dry per coat).
- j. Flat Finish Scuff Resistant Waterbase Enamel:
 - 1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry per coat).
 - 2) 2nd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series
 - 3) 3rd Coat: Sherwin-Williams Scuff Tuff Int. Waterbased Enamel, Matte, S23-50 Series (4 mils wet, 1.4 mils dry per coat).
- 2. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46- Series (4 mils wet, 1.5 mils dry per coat).
 - c. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45- Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45- Series (4 mils wet, 1.5 mils dry per coat).
 - d. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Interior Latex Primer, B28W2600 (4 mils wet, 1.5 mils dry).

- 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy, B73-360 Series (5.0 mils wet, 2.0 mils dry per coat).
- J. Concrete: Floors, non-vehicular.
- 1. Latex Systems:
 - a. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Tread-Plex Acrylic Floor Coating, B90 Series.
 - 2) 2nd Coat: S-W Tread-Plex Acrylic Floor Coating, B90 Series. (3.5 mils wet, 1.5 mils dry, per coat).
 - b. Satin Finish:
 - 1) 1st Coat: S-W Porch and Floor Enamel, A32-200 Series.
 - 2) 2nd Coat: S-W Porch and Floor Enamel, A32-200 Series (4 mils wet, 1.5 mils dry per coat).

1.4 HIGH PERFORMANCE INTERIOR PAINT AND COATING SYSTEMS

- A. Concrete; Smooth: Walls and Ceilings, Poured Concrete, Precast Concrete, Unglazed Brick, Cement Board, Tilt-Up, and Cast-In-Place.
- 1. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - 2. Epoxy Systems; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Tile-Clad HS Epoxy Gloss, B62Z/B60VZ70 Series.
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy Gloss, B62Z/B60VZ70 Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series.
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 3. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer/Sealer, LX02W50 Series (5.3-8.0 mils wet. 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Loxon Concrete & Masonry Primer/Sealer, LX02W50 Series (5.3-8.0 mils wet. 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.

- 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
 4. Urethane Systems: Solvent Base Finish.
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 5. Polysiloxane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete & Masonry Primer/Sealer, LX02W50 Series (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
- B. Concrete: Exposed Ceilings.
1. MultiSurface Acrylic Coating:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series (3.7-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - c. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - d. Matte Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series (3.75-5.0 mils wet, 1.5-2.4 mils dry per coat).
- C. Masonry CMU: Concrete, Split Face, Scored, Smooth, High Density, Low Density, Fluted, and Stucco.
1. Epoxy System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Heavy Duty Block Filler, B42W46 (18.0-34.0 mils wet, 10.0-18.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss,

- B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel/Low Luster Finish:
 - 1) 1st Coat: S-W Heavy Duty Block Filler, B42W46 (18.0-13.0 mils wet, 10.0-18.0 mils wet).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
- 2. Epoxy Systems; Solvent Base Finish:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy Gloss, B62Z/B60VZ Series.
 - 3) 3rd Coat: S-W Tile-Clad HS Epoxy Gloss, B62Z/B60VZ Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series.
 - 3) 3rd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
- 3. Urethane Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Heavy Duty Block Filler, B42W46 (18.0-34.0 mils wet, 10.0-18.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Heavy Duty Block Filler, B42W46 (18.0-34.0 mils wet, 10.0-18.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
- 4. Urethane Systems; Solvent Base Finish:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).

5. Polysiloxane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Kem Cati-Coat HS Epoxy Filler/Sealer, B42-400 Series (14.0-28.0 mils wet, 10.0-20.0 mils dry).
 - 2) 2nd Coat: : S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 3) 3rd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
- D. Non-Ferrous: Galvanized and Aluminum.
 1. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10 mils wet, 2.0-4.0 mils dry per coat).
 2. Epoxy Systems; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ Series.
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series.
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 3. Urethane Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).
 - 2) 2nd Coat: S-W Pro-Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro-Industrial Waterbased Acrolon 100 Gloss, B65-720 Series (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
 4. Urethane Systems; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).

- 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
- b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W DTM Wash Primer, B71Y1 (3.4-6.4 mils wet, 0.7-1.3 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
- 5. Polysiloxane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
- 6. Fluoropolymer System: Pigmented Fluoropolymer over Epoxy Intermediate and Epoxy Zinc-Rich Primer system.
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Zinc Clad 4100 Organic Zin-Rich Epoxy Primer (3.0-5.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 3) 3rd Coat: S-W Fluorokem HS 100, B65 Series, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
- 7. Multi-Surface Acrylic Coating: Exposed Ceilings.
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series (3.7-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - c. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - d. Matte Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series (3.75-5.0 mils wet, 1.5-2.4 mils dry per coat).
- E. Metal: Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous and Ornamental Iron, Structural Iron, and Ferrous Metal.
 - 1. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).

- 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
- b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
- 2. Epoxy System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series. (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ Series.
 - 3) 3rd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series.
 - 2) 2nd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series. (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
- 3. Urethane System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series. (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Acrolon 100 Gloss, B65-720 Series. (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series. (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series. (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
- 4. Urethane System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65-300 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65-300 Series. (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350 Series. (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
- 5. Polysiloxane System; Solvent Based:
 - a. Gloss Finish:

- 1) 1st Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
- 2) 2nd Coat: S-W Sher-loxane 800, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
6. Fluoropolymer System: Pigmented Fluoropolymer over Epoxy Intermediate and Epoxy Zinc-Rich Primer system.
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Zinc Clad 4100 Organic Zin-Rich Epoxy Primer (3.0-5.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646-100 Fast Cure Epoxy, B58 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 - 3) 3rd Coat: S-W Fluorokem HS 100, B65 Series, (5.0-7.0 mils wet, 4.0-6.0 mils dry per coat).
- F. Metal Exposed Ceilings: Structural Steel, Joists, Trusses, and Beams.
 1. MultiSurface Acrylic Coating:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Gloss, B66-1500 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Semi-Gloss, B66-1550 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - c. Eg-Shel Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Eg-Shel, B66-1560 Series (3.75-5.0 mils wet, 1.5-2.0 mils dry per coat).
 - d. Matte Finish:
 - 1) 1st Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series.
 - 2) 2nd Coat: S-W Pro Industrial Multi-Surface Acrylic Matte, B66-1570 Series (3.75-5.0 mils wet, 1.5-2.4 mils dry per coat).
- G. Wood: Doors, Trim, Partitions, and Frames.
 1. Epoxy System; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W08111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series. (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W08111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series. (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).

2. Epoxy System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W08111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ70 Series.
 - 3) 3rd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ70 Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Premium Wall and Wood Primer, B28W08111 (4 mils wet, 1.8 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series.
 - 3) 3rd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
- H. Drywall: Walls, Ceilings, and Gypsum Board.
1. Epoxy Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Gloss, B73-300 Series. (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 - b. Eg-Shel Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series. (5.0-10.0 mils wet, 2.0-4.0 mils dry per coat).
 2. Epoxy System; Solvent Based:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ70 Series.
 - 3) 3rd Coat: S-W Tile-Clad HS Epoxy, B62Z/B60VZ70 Series (4.0-7.0 mils wet, 2.5-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series
 - 3) 3rd Coat: S-W Macropoxy 646 Fast Cure Epoxy, B58-600 Series (7.0-13.5 mils wet, 5.0-10.0 mils dry per coat).
 3. Urethane Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Pro-Industrial Waterbased Acrolon 100 Gloss, B65-720 Series.
 - 3) 3rd Coat: S-W Pro-Industrial Waterbased Acrolon 100 Gloss, B65-720 Series (4.0-8.0 mils wet, 1.8-3.6 mils dry per coat).
 - b. Gloss Finish Single Component:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0

- mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series.
 - 3) 3rd Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Urethane Gloss, B65-120 Series (6.0-12.0 mils wet, 1.9-3.8 mils dry per coat).
- 4. Urethane Systems; Solvent Base:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Gloss, B65/B60-30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W02600 (4.0 mils wet, 1.0 mils dry).
 - 2) 2nd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series.
 - 3) 3rd Coat: S-W Hi-Solids Polyurethane Semi-Gloss, B65-350/B60V30 Series (4.5-8.0 mils wet, 3.0-5.0 mils dry per coat).

1.5 EXTERIOR PAINT AND COATING SYSTEMS

- A. Concrete: Cementitious Siding, Flexboard, Transite Board, Non-Roof Shingles, Common Brick, Stucco, Tilt-up, Precast, and Poured-in-place Cement.
 - 1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series (4.0 mils wet, 1.3 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series. (6.0-12.0 mils wet, 2.0-4.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series (4.0 mils wet, 1.5 mils dry per coat).
 - d. Satin Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series.
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series (5.0-7.0 mils wet, 2.0-2.8 mils dry per coat).
 - e. Flat Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series (4.0 mils wet, 1.2 mils dry per coat).

- f. Flat Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series.
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
- 2. Elastomeric System: Not including cementitious siding, Flexboard, Transite board or shingles (non-roof).
 - a. Flat Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11W50 Series.
 - 3) 3rd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11W50 Series (13.0-16.0 mils wet, 6.0-7.5 mils dry per coat).
 - b. Flat Finish:
 - 1) 1st Coat: S-W Loxon BlockSurfacer, A24W00200 (16.0 mils wet, 8.8 mils dry).
 - 2) 2nd Coat: S-W Conflex SherLastic Elastomeric Masonry Coating, CF16W50 Series.
 - 3) 3rd Coat: S-W Conflex SherLastic Elastomeric Masonry Coating, CF16W50 Series (10.0-14.0 mils wet, 4.0-6.0 mils dry per coat).
- 3. Textured Elastomeric System:
 - a. Textured Finish:
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11W50 Series (13.0-16.0 mils wet, 6.0-7.5 mils dry per coat).
 - 3) 3rd Coat: S-W ConFlex XL Textured Elastomeric High Build Coating, CF15W50 Series (20.0-23.0 mils wet, 9.4-11.0 mils dry per coat).
 - a) Finish Texture: Fine.
 - b) Finish Texture: Medium.
 - c) Finish Texture: Extra Coarse.
- 4. Textured and Smooth Systems:
 - a. Textured (Waterbased Finish):
 - 1) 1st Coat: S-W Loxon Concrete and Masonry Primer Sealer, LX02W50 (5.3-8.0 mils wet, 2.1-3.2 mils dry).
 - 2) 2nd Coat: S-W Conflex UltraCrete Acrylic Textured Masonry Topcoat CF18W800 Series (50-80 sq ft/gal).
 - a) Finish Texture: Fine.
 - b) Finish Texture: Medium.
 - c) Finish Texture: Extra Coarse.
 - b. Textured Finish; Solvent Based:
 - 1) 1st Coat: S-W UltraCrete Smooth Waterproofing Masonry Coating, B46 Series (100-160 sq ft/gal).
 - 2) 2nd Coat: S-W Conflex UltraCrete Solvent Textured Waterproofing Masonry Coating, CF18W850 Series (50-80 sq ft/gal).
 - a) Finish Texture: Fine.
 - b) Finish Texture: Medium.
 - c) Finish Texture: Extra Coarse.
 - c. Smooth (Waterbased Finish):
 - 1) 1st Coat: S-W Loxon XP, LX11W50 Series.

- 2) 2nd Coat: S-W Loxon XP, LX11W50 Series (14.0-18.0 mils wet; 6.4-8.3 mils dry per coat).
5. Stain System:
 - a. Solid Color Waterborne Finish:
 - 1) 1st Coat: S-W Loxon Vertical Concrete Stain, LX31W50 Series.
 - 2) 2nd Coat: S-W Loxon Vertical Concrete Stain, LX31W50 Series (50-250 sq/ft gal).
6. Clear Water Repellant:
 - a. Clear:
 - 1) 1st Coat: S-W Conflex 7 percent Siloxane Water Repellant, CF31T7.
 - 2) 2nd Coat: S-W Conflex 7 percent Siloxane Water Repellant, CF31T7 (50-200 sq ft/ gal).
- B. Masonry: Concrete Masonry Units (CMU); Cinder or Concrete Block.
 1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series (4.0 mils wet, 1.3 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series. (6.0-12.0 mils wet, 2.0-4.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series (4.0 mils wet, 1.5 mils dry per coat).
 - d. Satin Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series.
 - 3) 3rd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
 - e. Flat Finish:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series (4.0 mils wet, 1.2 mils dry per coat).
 - f. Flat Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W PrepRite Block Filler, B25W25 (75-125 sq ft/gal).
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series.
 - 3) 3rd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
 2. Elastomeric System:
 - a. Flat Finish:
 - 1) 1st Coat: S-W Loxon BlockSurfacer, A24W00200 (16.0 mils wet, 8.8 mils dry).
 - 2) 2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11W50 Series.

- 3) 3rd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11W50 Series (13.0-16.0 mils wet, 6.0-7.5 mils dry per coat).
 - b. Flat Finish:
 - 1) 1st Coat: S-W Loxon BlockSurfacer, LX01W200 (16.0 mils wet, 8.8 mils dry).
 - 2) 2nd Coat: S-W Conflex SherLastic Elastomeric Masonry Coating, CF16W50 Series.
 - 3) 3rd Coat: S-W Conflex SherLastic Elastomeric Masonry Coating, CF16W50 Series (10.0-14.0 mils wet, 4.0-6.0 mils dry per coat).
 - 3. Textured Elastomeric System:
 - a. Textured Finish:
 - 1) 1st Coat: S-W Loxon BlockSurfacer, LX01W200 (16.0 mils wet, 8.8 mils dry).
 - 2) 2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11W50 Series (13.0-16.0 mils wet, 6.0-7.5 mils dry per coat).
 - 3) 3rd Coat: S-W ConFlex XL Textured Elastomeric High Build Coating, CF15W50 Series (20 mils wet, 9.4 mils dry per coat).
 - a) Finish Texture: Fine.
 - b) Finish Texture: Medium.
 - c) Finish Texture: Extra Coarse.
 - 4. Textured Masonry System:
 - a. Textured Finish; Waterbased:
 - 1) 1st Coat: S-W Loxon BlockSurfacer, LX01W200 (16.0 mils wet, 8.8 mils dry).
 - 2) 2nd Coat: S-W Conflex UltraCrete Acrylic Textured Masonry Topcoat CF18W800 Series (50-80 sq ft/gal).
 - a) Finish Texture: Fine.
 - b) Finish Texture: Medium.
 - c) Finish Texture: Extra Coarse.
 - b. Textured Finish; Solvent Based:
 - 1) 1st Coat: S-W UltraCrete Smooth Waterproofing Masonry Coating, B46 Series (100-160 sq ft/gal).
 - 2) 2nd Coat: S-W Conflex UltraCrete Solvent Textured Waterproofing Masonry Coating, CF18W850 Series (50-80 sq ft/gal).
 - a) Finish Texture: Fine.
 - b) Finish Texture: Medium.
 - c) Finish Texture: Extra Coarse.
 - c. Smooth Finish; Waterbased:
 - 1) 1st Coat: S-W Loxon XP, LX11W50 Series.
 - 2) 2nd Coat: S-W Loxon XP, LX11W50 Series (14.0-18.0 mils wet; 6.4-8.3 mils dry per coat).
 - 5. Stain System:
 - a. Solid Color Waterborne Finish:
 - 1) 1st Coat: S-W Loxon Vertical Concrete Stain, LX31W50 Series.
 - 2) 2nd Coat: S-W Loxon Vertical Concrete Stain, LX31W50 Series (50-250 sq/ft gal).
 - 6. Clear Water Repellant:
 - a. Clear Finish:
 - 1) 1st Coat: S-W Conflex 7 percent Siloxane Water Repellant, CF31T7.
 - 2) 2nd Coat: S-W Conflex 7 percent Siloxane Water Repellant, CF31T7 (50-200 sq ft/ gal).
- C. Concrete: Non-Vehicular Floors, Patios, Porches, Steps and Platforms.

1. Acrylic System Water-Based:
 - a. Floor Finish:
 - 1) 1st Coat: S-W Porch and Floor Enamel, A32-200 Series.
 - 2) 2nd Coat: S-W Porch and Floor Enamel, A32-200 Series (4.0 mils wet, 1.5 mils dry per coat).
 - b. Floor Finish:
 - 1) 1st Coat: S-W ConFlex Flexible Concrete Waterproofer-Smooth, CF14W50 Series.
 - 2) 2nd Coat: S-W Conflex Flexible Concrete Waterproofer-Smooth, CF14W50 Series (10.0-12.0 mils wet per coat).
- D. Metal: Aluminum, Galvanized.
 1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series.
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 Series (2.0-4.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series.
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Eg-Shel, B66-660 Series (2.0-4.0 mils dry per coat).
 - d. Flat Finish:
 - 1) 1st Coat: S-W A-100 Exterior Latex Flat, A6 Series.
 - 2) 2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series (4.0 mils wet, 1.2 mils dry per coat).
 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).

- E. Metal: Miscellaneous. Iron, Ornamental Iron, Structural Iron and Steel, Ferrous Metal.
1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Gloss, B66-600 Series (2.0-4.0 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0-10.0 mils wet, 1.8-3.6 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 (2.0-4.0 mils dry per coat).
 2. Alkyd Systems; Waterbased:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Gloss, B53-1050 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
 - c. Low Sheen Finish:
 - 1) 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 2.0 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series.
 - 3) 3rd Coat: S-W Pro Industrial Waterbased Alkyd Urethane Enamel Low Sheen, B53-1250 Series (4.0-5.0 mils wet, 1.4 - 1.7 mils dry per coat).
- F. Wood: Decks, Exterior including pressure treated lumber, non-vehicular Floors, and Platforms.
1. Acrylic Water-Based Floor System:
 - a. Floor Finish:
 - 1) 1st Coat: S-W Porch and Floor Enamel, A32-200 Series.
 - 2) 2nd Coat: S-W Porch and Floor Enamel, A32-200 Series (4.0 mils wet; 1.5 mils dry per coat).
 2. Stain Systems:
 - a. Solid Color Acrylic Latex:
 - 1) 1st Coat: S-W SuperDeck Exterior Waterborne Solid Color Deck Stain, SD7-Series.
 - 2) 2nd Coat: S-W SuperDeck Exterior Waterborne Solid Color Deck Stain, SD7-Series (200-400 sq ft/gal).

- b. Semi-Solid Color Acrylic Latex:
 - 1) 1st Coat: S-W SuperDeck Exterior Waterborne Semi-Solid Color Deck Stain, SD5-Series.
 - 2) 2nd Coat: S-W SuperDeck Exterior Waterborne Semi-Solid Color Deck Stain, SD5-Series (100-350 sq ft/gal).
 - c. Semi-Transparent Stain:
 - 1) 1st Coat: S-W SuperDeck Exterior Waterborne Semi-Transparent Stain, SD3T Series.
 - 2) 2nd Coat: S-W SuperDeck Exterior Waterborne Semi-Transparent Stain, SD3T Series (100 - 350 sq ft/gal).
 - d. Clear Stain:
 - 1) 1st Coat: S-W SuperDeck Exterior Waterborne Clear Sealer, SD1T00100.
 - 2) 2nd Coat: S-W SuperDeck Exterior Waterborne Clear Sealer, SD1T00100, (150 - 300 sq ft/gal).
- G. Wood: Siding, Trim, Shutters, Sashes, and Hardboard-Bare/Primed.
- 1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series (4.0 mils wet, 1.3 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 (2.0-4.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series (4.0 mils wet, 1.5 mils dry per coat).
 - d. Satin Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series.
 - 3) 3rd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
 - e. Flat Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series (4.0 mils wet, 1.2 mils dry per coat).
 - f. Flat Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50

- Series.
- 3) 3rd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
- 2. Stain; Water Reducible Systems:
 - a. Semi-Transparent:
 - 1) 1st Coat: S-W WoodScapes Exterior Polyurethane Semi-Transparent Stain, A15T00005.
 - 2) 2nd Coat: S-W WoodScapes Exterior Polyurethane Semi-Transparent Stain, A15T00005 (100-350 sq ft/gal).
 - b. Solid Color:
 - 1) 1st Coat: S-W WoodScapes Exterior Acrylic Solid Color Stain, A15 Series.
 - 2) 2nd Coat: S-W WoodScapes Exterior Acrylic Solid Color Stain, A15 Series (200-400 sq ft/gal).
- H. Drywall: Gypsum Board and Exterior Drywall.
 - 1. Latex Systems:
 - a. Gloss Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W08041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series (4.0 mils wet, 1.3 mils dry per coat).
 - b. Semi-Gloss Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W08041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650.
 - 3) 3rd Coat: S-W Pro Industrial Acrylic Semi-Gloss, B66-650 (2.0-4.0 mils dry per coat).
 - c. Satin Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W08041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series (4.0 mils wet, 1.5 mils dry per coat).
 - d. Satin Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series.
 - 3) 3rd Coat: S-W Loxon Self Cleaning Acrylic Coating-Satin, LX14-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).
 - e. Flat Finish:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W08041 (4.0 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series.
 - 3) 3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series (4.0 mils wet, 1.2 mils dry per coat).
 - f. Flat Finish Self Cleaning Upgrade:
 - 1) 1st Coat: S-W Exterior Latex Wood Primer, B42W8041 (4 mils wet, 1.4 mils dry).
 - 2) 2nd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series.

- 3) 3rd Coat: S-W Loxon Self Cleaning Acrylic Coating-Flat, LX13-50 Series (5.0-7.0 mils wet, 2.0-2.8 dry per coat).

PART 3 EXECUTION

1.0 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared; notify Architect of unsatisfactory conditions before proceeding. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- B. Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.
- C. Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

1.1 SURFACE PREPARATION

- A. General: Surfaces shall be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
 - 1. Prior to attempting to remove mildew, it is recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions are advised.
 - 2. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply solution and scrub the mildewed area. Allow solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow surface to dry before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.
 - 3. Remove items including but not limited to thermostats, electrical outlets, switch covers and similar items prior to painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
 - 4. No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50 degrees F (10 degrees C), unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface and material temperatures must be 50 degrees F (10 degrees F) or higher to use low temperature products.
- B. Aluminum: Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP1, Solvent Cleaning.
- C. Block (Cinder and Concrete): Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75 degrees F (24 degrees C). The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH

environments. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a cement patching compound.

- D. Concrete, SSPC-SP13 or NACE 6: This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all types of cementitious surfaces including cast-in-place concrete floors and walls, precast slabs, masonry walls, and shotcrete surfaces. An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.
- E. Cement Composition Siding/Panels: Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Pressure clean, if needed, with a minimum of 2100 psi pressure to remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments.
- F. Copper and Stainless Steel: Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP 2, Hand Tool Cleaning.
- G. Exterior Composition Board (Hardboard): Some composition boards may exude a waxy material that must be removed with a solvent prior to coating. Whether factory primed or unprimed, exterior composition board siding (hardboard) must be cleaned thoroughly and primed with an alkyd primer.
- H. Drywall - Exterior: Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting. Exterior surfaces must be spackled with exterior grade compounds.
- I. Drywall - Interior: Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting.
- J. Galvanized Metal: Clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils. Apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP16 is necessary to remove these treatments.
- K. Plaster: Must be allowed to dry thoroughly for at least 30 days before painting unless the products are designed to be used in high pH environments. Room must be ventilated while drying; in cold, damp weather, rooms must be heated. Damaged areas must be repaired with an appropriate patching material. Bare plaster must be cured and hard. Textured, soft, porous, or powdery plaster should be treated with a solution of 1 pint household vinegar to 1 gallon of water. Repeat until the surface is hard, rinse with clear water and allow to dry.
- L. Steel: Structural, Plate, And Similar Items: Should be cleaned by one or more of the surface preparations described below. These methods are used throughout the world for describing methods for cleaning structural steel. Visual standards are

available through the Society of Protective Coatings. A brief description of these standards together with numbers by which they can be specified follow.

1. Solvent Cleaning, SSPC-SP1: Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Be sure to allow adequate ventilation.
2. Hand Tool Cleaning, SSPC-SP2: Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before hand tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.
3. Power Tool Cleaning, SSPC-SP3: Power Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before power tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.
4. White Metal Blast Cleaning, SSPC-SP5 or NACE 1: A White Metal Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.
5. Commercial Blast Cleaning, SSPC-SP6 or NACE 3: A Commercial Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 33 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.
6. Brush-Off Blast Cleaning, SSPC-SP7 or NACE 4: A Brush-Off Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose paint. Tightly adherent mill scale, rust, and paint may remain on the surface. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP 1 or other agreed upon methods.
7. Power Tool Cleaning to Bare Metal, SSPC-SP11: Metallic surfaces that are prepared according to this specification, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxide corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portions of pits if the original surface is pitted. Prior to power tool surface preparation, remove visible deposits of oil or grease by any of the methods specified in SSPC-SP1, Solvent Cleaning, or other agreed upon methods.
8. Near-White Blast Cleaning, SSPC-SP10 or NACE 2: A Near White Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 5 percent of each square inch of surface area and may consist of light

shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.

9. High- and Ultra-High Pressure Water Jetting for Steel and Other Hard Materials: SSPC-SP12 or NACE 5: This standard provides requirements for the use of high- and ultra-high pressure water jetting to achieve various degrees of surface cleanliness. This standard is limited in scope to the use of water only without the addition of solid particles in the stream.
 10. Water Blasting, SSPC-SP12/NACE No. 5: Removal of oil grease dirt, loose rust, loose mill scale, and loose paint by water at pressures of 2,000 to 2,500 psi at a flow of 4 to 14 gallons per minute.
- M. Vinyl Siding, Architectural Plastics, EIFS and Fiberglass: Clean vinyl siding thoroughly by scrubbing with a warm, soapy water solution. Rinse thoroughly. Do not paint vinyl siding with any color darker than the original color unless the paint system features Sherwin-Williams VinylSafe technology. Painting with darker colors that are not Sherwin-Williams VinylSafe may cause siding to warp. Follow all painting guidelines of the vinyl manufacturer when painting. Only paint properly installed vinyl siding. Deviating from the manufacturer's painting guidelines may cause the warranty to be voided.
- N. Stucco: Must be clean and free of any loose stucco. If recommended procedures for applying stucco are followed, and normal drying conditions prevail, the surface may be painted in 30 days. The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments such as Loxon.
- O. Wood: Must be clean and dry. Prime and paint as soon as possible. Knots and pitch streaks must be scraped, sanded, and spot primed before a full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth.

1.4 INSTALLATION

- A. Apply all coatings and materials with the manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendations.
- B. Do not apply to wet or damp surfaces. Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days. Test new concrete for moisture content. Wait until wood is fully dry after rain or morning fog or dew.
- C. Apply coatings using methods recommended by manufacturer.
- D. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.
- E. Apply coatings at spreading rate required to achieve the manufacturers recommended dry film thickness.
- F. Regardless of number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.
- G. Inspection: The coated surface must be inspected and approved by the Architect

just prior to the application of each coat.

1.5 PROTECTION

- A. Protect finished coatings from damage until completion of project.
- B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION