PROJECT MANUAL

WEST HERR JAGUAR

CAMPBELL BOULEVARD
GETZVILLE, NY

January 12, 2018

SA PROJECT NO. 07231.14

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TABLE OF CONTENTS

AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)
West Herr Jaguar
Millersport Highway
Getzville, NY

THE OWNER:
(Name, legal status and address)
West Herr
3552 Southwestern Blvd.
Orchard Park, NY

THE ARCHITECT:
(Name, legal status and address)
Silvestri Architects, PC
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Amherst, NY 14221

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

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

TABLE OF ARTICLES

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INDEX
(Topics and numbers in bold are section headings.)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

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

§ 1.1.2 THE CONTRACT

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

§ 1.1.3 THE WORK

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

§ 1.1.4 THE PROJECT

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

§ 1.1.5 THE DRAWINGS

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

§ 1.1.6 THE SPECIFICATIONS

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

§ 1.1.7 INSTRUMENTS OF SERVICE

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

§ 1.1.8 INITIAL DECISION MAKER

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

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

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

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

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

§ 1.3 CAPITALIZATION

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

§ 1.4 INTERPRETATION

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

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

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

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

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

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

ARTICLE 2 OWNER

§ 2.1 GENERAL

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

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

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

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

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

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

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

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

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

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

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

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

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

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

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

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

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

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

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

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

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

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other

facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

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

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

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

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

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

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

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

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

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume

the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

.1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

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

§ 3.9 SUPERINTENDENT

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

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

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

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

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

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

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

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

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

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

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

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

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

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

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

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

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

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

required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

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

§ 3.14 CUTTING AND PATCHING

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

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

§ 3.15 CLEANING UP

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

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

§ 3.16 ACCESS TO WORK

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

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

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

§ 3.18 INDEMNIFICATION

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

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

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

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

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

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

§ 4.2 ADMINISTRATION OF THE CONTRACT

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

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

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

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION
Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

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

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

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

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

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

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

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

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

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

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

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

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

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

§ 5.3 SUBCONTRACTUAL RELATIONS

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

be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

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

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

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

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

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

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

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

§ 6.2 MUTUAL RESPONSIBILITY

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that

the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

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

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

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

§ 6.3 OWNER'S RIGHT TO CLEAN UP

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

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

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

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

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

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

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

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

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

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

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

.4 As provided in Section 7.3.7.

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

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

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

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

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

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

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

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

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

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

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

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

§ 7.4 MINOR CHANGES IN THE WORK

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

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

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

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

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

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

§ 8.2 PROGRESS AND COMPLETION

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

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

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

§ 8.3 DELAYS AND EXTENSIONS OF TIME

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

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

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

§ 9.2 SCHEDULE OF VALUES

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

§ 9.3 APPLICATIONS FOR PAYMENT

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

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

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

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

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

§ 9.4 CERTIFICATES FOR PAYMENT

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

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

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

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

.1 defective Work not remedied;

.2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

.3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;

.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

.5 damage to the Owner or a separate contractor;

.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or

.7 repeated failure to carry out the Work in accordance with the Contract Documents.

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

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

§ 9.6 PROGRESS PAYMENTS

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

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

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

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

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

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

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

§ 9.7 FAILURE OF PAYMENT

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

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

§ 9.8 SUBSTANTIAL COMPLETION

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

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

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

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

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

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

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

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

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

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

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

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

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

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

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

§ 10.2 SAFETY OF PERSONS AND PROPERTY

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

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

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

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

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

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

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

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

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

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

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

§ 10.3 HAZARDOUS MATERIALS

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

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

extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

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

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

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

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

§ 10.4 EMERGENCIES

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

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

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

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

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the

Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

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

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

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

§ 11.3 PROPERTY INSURANCE

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

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

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

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

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

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

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

§ 11.3.3 LOSS OF USE INSURANCE

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

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

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

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

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

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

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

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

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

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

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

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

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

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

nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

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

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

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

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

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

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

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

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

§ 13.3 WRITTEN NOTICE

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

§ 13.4 RIGHTS AND REMEDIES

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

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

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

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

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

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

§ 13.6 INTEREST

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

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

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

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

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

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

.4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

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

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

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

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

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

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

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

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

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

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

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

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

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

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

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

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

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

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

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

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

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

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration

permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

Additions and Deletions Report for

AIA® Document A201™ – 2007

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 10:28:47 on 05/05/2017.

PAGE 1

West Herr Jaguar
Millersport Highway
Getzville, NY

...

West Herr
3552 Southwestern Blvd.
Orchard Park, NY

...

Silvestri Architects, PC
1321 Millersport Highway, Suite 101
Amherst, NY 14221

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, Philip J. Silvestri, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 10:28:47 on 05/05/2017 under Order No. 4391447615_1 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A201™ – 2007, General Conditions of the Contract for Construction, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

_____

(Signed)

_____

(Title)

_____

(Dated)

SUPPLEMENTARY GENERAL CONDITIONS

1. PROTECTION OF PERSONS AND PROPERTY

(Amend Article 10 of the General Conditions by the addition of the following):

All items of work required for the protection of public, workmen, site and construction operation as required by the General Conditions and/or laws or regulations shall be completed before the work is started on the project.

2. EXECUTION, CORRELATION, INTENT OF DOCUMENTS

Make no changes from Contract Documents without first receiving written permission from the Architect. Where detailed information is lacking, before proceeding with work, refer matter to Architect for information.

If work is required in manner to make it impossible to produce first class work, or should discrepancies appear among Contract Documents, request interpretation before proceeding with work. If Contractor fails to make such request, no excuse will thereafter be entertained for failure to carry out work in satisfactory manner. Should conflict occur in or between drawings and specifications, Contractor is deemed to have estimated on more expensive way of doing Work unless he shall have asked for and obtained written decision before submission of proposal as to which method or materials will be required.

Omissions from the drawings or specification, or the misdescription of details for work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work; but they shall be performed to complete the work as it is intended, without any gaps between the various subdivision of work or between the work of the Contractor and all subcontractors, as if fully and correctly set forth and described in the drawings and specifications.

3. SUBCONTRACTORS

(Amend Article 5.2-1 of the General Conditions by the addition of the following):

Within 10 days after awarding of the contracts, the prime Contractors shall submit a list of suppliers and/or Subcontractors he or she proposes to employ in the construction of the project for approval to the architect.

4. SUBSTANTIAL COMPLETION

(Amend Article 9.8 of the General Conditions by the addition of the following):

Substantial completion is defined as the point of time when the owner is able to use the facility in its entirety.

5. PROGRESS PAYMENTS

(Amend Article 9.6 of the General Conditions by the addition of the following):

Payments will be made on the basis of progress and will be made once a month. Application for Payment Form shall be submitted in triplicate on AIA Standard Form Document G702 by the thirtieth of each month for payment by the thirtieth of the following month.

Progress payments shall be made upon monthly requisitions from the contractor in the amount of ninety per cent, (90%), of the contract sum allocated to labor and materials and equipment stored on or off site for that monthly period.

6. CONTRACT

The Form of Agreement Between the Construction Manager and Sub Contractor, (Stipulated Sum), AIA Document A401, Standard Form of the American Institute of Architects, l987 edition, pages 1 through 4, shall be used as the contract and shall form a part of these bidding documents.

This document is kept on file in the architect's office and may be examined upon request by any of the bidders.

END OF SECTION

1. INVITATION TO BID

Sealed Bids are requested by the Owner, for the Single Prime Contract defined and listed in Division 1 - General Requirements, Section 1A, 1.1 Contracts. Bids shall be submitted no later than 2:00pm on March 15, 2018 at the office of West Herr, 3552 Southwestern Blvd., Orchard Park, NY 14127, Attn: John Wabick.

Bids to be submitted on the forms included herein, copies of which may be obtained from the General Contractor's office.

All blanks are to be appropriately filled in.

2. CONDITIONS OF WORK

Each bidder must inform himself fully of the conditions relating to the construction and labor under which the work is now or will be performed; failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in his bid.

3. ADDENDA AND INTERPRETATIONS

No interpretations of the meaning of the plans, specifications or other contract documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to SILVESTRI ARCHITECTS, P.C., 1321 Millersport Highway, Suite 101, Amherst, New York 14221, and to be given consideration must be received at least five (5) days prior to the date fixed for the opening of bids, and all such interpretations and any supplemental instruction will be in the form of written addenda to the specification, which, if issued, will be mailed to all prospective bidders (at the respective addresses furnished for that purpose) not later than three (3) days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation, shall not relieve any bidder from obligation under his bid submitted. All addenda will be numbered and dated, and a list of such addenda may be obtained be contacting the Architect's office.

4. CONTRACT FORM

The Standard Form of Agreement between Owner and Contractor A.I.A. Document Al0l Latest Edition will be submitted by Owner to the successful bidder for proper signatures.

5. OBLIGATION OF BIDDER

At the time of the opening of bids, each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Plans and Contract Documents (including all addenda). The failure or omission of any bidder to receive or examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect of his bid.

6. BID FORM

The Contractor shall submit his bid on form furnished by Architect.

7. SUBSTITUTION OF MATERIALS

"EQUIVALENTS: Where, in these specifications, one certain kind, type, brand or manufacture of material is named, it shall be regarded as the required standard of quality. Where two or more are named, these are presumed to be equal, and the Contractor may select one of those items. If the Contractor desires to use any kind, type, brand or manufacture of material other than those named in the specifications, he shall indicate on the Substitution Sheet what material, equipment, or method is offered as equal and when requested, submit information describing wherein it differs from base specifications in specific detail and other information as required by the Owner."

The acceptable standard of quality of all equivalent items shall be determined by the Architect with the burden of proof of the equivalency of such items a responsibility of the bidders, and to be submitted through the prime bidder's office, and shall be acceptable to the prime bidder.

WEST HERR JAGUAR **BID FORM**

ALL BIDDERS NOTE : Three signed copies of this bid form must be submitted.

TO: West Herr
3552 Southwestern Blvd.
Orchard Park, NY 14127
Attn: John Wabick

Pursuant to and in compliance with the Advertisement for Bids and/or the Instructions to Bidders, relating hereto, the undersigned hereby offers to furnish all plant, labor, materials, supplies, equipment and other facilities and things necessary and proper for, or incidental to, the Work as required by the plans and specifications as prepared by SILVESTRI ARCHITECTS, P.C., and all the following addenda issued by the Architect and mailed to the Undersigned prior to the opening of bids.

The bidder hereby acknowledges receipt of the following addenda:

Addendum No. _____ Dated

Addendum No. _____ Dated

Addendum No. _____ Dated

Base bid

($ _____)

Bid Breakdown:

General Construction:

Exterior Windows & Doors: $_____

Site Work: $_____

All Other Work: $_____

HVAC: $_____

Plumbing: $_____

Electrical: $_____

Contractor Firm Name: _____

The Undersigned agrees that upon request of the Owner, the amounts listed above will be broken down into separate prices, as requested by the Architect.

By submission of this bid, each Bidder and each person signing on behalf of any Bidder, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

(l) The prices in this Bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other Bidder or with a competitor;
(2) Unless otherwise required by law, the prices which have been quoted in this Bid have not been knowingly disclosed by the Bidder, and will not be knowingly disclosed by the Bidder prior to opening, directly or indirectly, to any other Bidder or to any competitor.
(3) No attempt has been made or will be made by the Bidder to induce any person, partnership or corporation to submit or not to submit a Bid for the purpose of restricting competition.

This bid may be withdrawn at any time prior to the scheduled time for the opening of bids or any authorized postponement thereof.

FIRM

BY

TITLE

ADDRESS

Corporation Seal if Applicable

*Here insert Bidder's Name. If a corporation, give the State of Incorporation using the phrase, "A corporation organized under the laws of the State of _____".

If the partnership, give names of partners, using also the phrase, "Co-partners trading and doing business under the firm name and style of _____".

If an individual, give the individual's name, using also the phrase "An individual doing business under the firm name and style of _____".

SUBSTITUTIONS:

The following spaces have been allotted for manufacturer's products that are considered equal to the material specified and the Addition or Deduction from the Base Bid.

NOTE: Base Bid will contain cost of items, written on the specifications, the substitution items and price quotations listed below may or may not be accepted by the Owner.

ITEM	MANUFACTURER	ADD/DEDUCT
l. _____	_____	$
2. _____	_____	$
3. _____	_____	$
4. _____	_____	$
5. _____	_____	$
6. _____	_____	$
7. _____	_____	$
8. _____	_____	$
9. _____	_____	$
10._____	_____	$

SECTION 01010 - SUMMARY OF WORK

1.0 GENERAL

This project consists of the renovation and 5,400 square foot addition to an existing building to accommodate a new Jaguar dealership.

1.1 CONTRACTS

A. This is a Single Contract project with combined contracts as follows:
   1. General Construction
   2. Sitework
   3. Plumbing
   4. HVAC
   5. Electrical
   6. The Construction Manager will be responsible for the construction of the entire project.
   7. The Construction Manager as prime Contractor is responsible for coordination between himself and all his Subcontractors.
   8. All Contractors, prime or sub are directed to cooperate and coordinate their work with each other, and the lack of such will not be an acceptable excuse for delays.
   9. Any conflicts between the Construction Manager and/or subcontractors which will cause delay in construction, must be brought to the attention of the Architect, in writing, within twenty-four (24) hours.

B. All contracts shall include the General Conditions, and Supplementary Conditions, and General Requirements.

C. Extent of Operation - The Contractors shall provide all items, articles, materials, operation or methods listed, indicated, mentioned, or scheduled on the drawings and/or in the specifications, including all labor, materials, equipment and incidentals, necessary and required for their completion and installation in the project.

1.2 EXAMINATION OF SITE, DOCUMENTS, ETC.

Each bidder shall visit the site of the proposed work and fully acquaint himself with the conditions as they exist so that he may fully understand the facilities, difficulties, and restrictions attending the execution of the work under the Contract. Bidders shall also thoroughly examine and be familiar with the drawings and the specifications. The failure or omission of any Bidder to receive or examine any form, instrument, or document, or to visit the site or acquaint himself with conditions there existing shall in no way relieve the Bidder from any obligation with respect to his Bid.

1.3 PERMITS

The prime Contractors are responsible for obtaining and paying for all necessary permits as required by laws and ordinances, for work required to construct the project.

1.4 REFERENCES

References to known standard specifications shall mean and intend latest edition of such specifications adopted and published at date of invitation to submit proposals.

Reference to technical society, or organization or bodies is made in the specifications in accordance with the following abbreviations:

AIA	American Institute of Architects
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
ASTM	American Society for Testing Materials
AWSC	American Welding Society Code
FS	Federal Specification
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
UL	Underwriters' Laboratories, Inc.
ASA	American Standard Association
SJI	Steel Joist Institute
AASHO	American Association of State Highway Official
CSI	Construction Specifications Institute
NYS	New York State Public Works Specification 1-2-62

1.5 CONSTRUCTION ASSOCIATION, CODES AND SPECIFICATIONS (option to substitute or add to references)

AA	Aluminum Association
AAMA	Architectural Aluminum Manufacturer's Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National standard Institute
APA	American Plywood Association
ASHRAE	American Society of Heating, Refrigeration and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWI	American Woodwork Institute
AWPI	American Wood Preservers Institute
AWS	American Welding Society

BIA	Brick Institute of America
CRCI	Concrete Reinforcing Steel Institute
CS	Commercial Standards
FGMA	Flat Glass Marketing Association
FM	Factory Mutual System
IEEE	Institute of Electrical and Electronic Engineers
NBS	National Bureau of Standards
NEC	National Electric Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NYSDOT	New York State Department of Transportation
NYSDPW	New York State Department of Public Works
PCI	Precast Concrete Institute
PEI	Porcelain Enamel Institute
SAMA	Scientific Apparatus Makers Association
SDI	Steel Deck Institute
SMACNA	Sheet Metal and Air-Conditioning Contractor's National Association
SSPC	Structural Steel Painting Council
UL	Underwriter's Laboratories

1.6 ITEMS PROVIDED BY THIS CONTRACTOR

The Construction Manager shall provide and maintain all temporary facilities, such a s water, electrical services, telephone and toilets. The General Contractor is also to provide a temporary field office.

A. Toilet facilities may be provided by the Construction Manager.

B. Temporary field office shall be provided and maintained by the Construction Manager.

C. Temporary water service shall be provided by plumbing subcontractor.

D. Temporary Electrical Service shall be provided by the electrical Subcontractor.

E. Temporary heating shall be provided by the HVAC subcontractors.

1.7 STORAGE AND PARKING AREAS

A. The Construction Manager shall provide and maintain an temporary area at the site suitable for vehicular parking and for the stockpiling and storage of equipment and materials. These facilities shall be for the use of personnel for all trades of the project.

B. The Construction Manager shall keep such area free of debris, obstructions, standing water and provide necessary barricades.

1.8 GUARANTEES

A. Whenever within one year of beneficial occupancy any of the prime Contractors is notified in writing by either the Architect or the Owner, that any item of equipment, material and/or workmanship has proved defective or is not in any way meeting the specification requirements, he shall immediately replace, repair or otherwise correct the defect or deficiency without cost to the Owner.

B. The Contractor's liability for defects in materials and labor shall not be limited to less than the legal limit of liability in accordance with the laws of the State of New York.

C. The Contractor shall submit all guarantees, warranties, bonds and operating manuals to the Architect prior to receipt of final payment, for all work, materials and equipment provided under their contract.

1.9 AVAILABILITY OF MATERIALS

A. The Contractors shall review the availability of the materials specified and/or shown on drawings and must notify the Architect of any materials that will cause any delays in the construction of the project.

B. The delivery times, plus a list of alternate materials proposed, including additions or deductions in cost must be submitted in writing to the Architect for his review within two weeks after the award of the contract.

C. All materials must be provided as specified unless approved equal by the Architect.

1.10 PROTECTION OF MATERIALS

The prime Contractors shall bear the sole responsibility for the care and protection of his respective materials and work installed in the building, and materials stored on the site for which payment has been made, and for the restoration of damaged or stolen materials, at no additional cost to the Owner.

1.11 LISTS AND SCHEDULES

The prime Contractors shall furnish a list of their subcontractors and a schedule of construction, in accordance with the General and Supplementary General Conditions of these bidding documents, if required by the Construction Manager and/or Architect.

1.12 REQUIRED INSURANCE

A. Before commencing the work, each prime contractor shall furnish to the Owner a certificate or certificates of insurance in form satisfactory to the Owner, showing that he has complied with the general conditions. Owner shall be named as an additional insured on all policies by which carrier agrees to provide owner with at least thirty (30) days notice of any cancellation

or change in policy.

B. The kinds and amounts of insurance are as follows:

1. Workmen's Compensation Insurance: a policy covering the obligations of the Contractor in accordance with the provisions of Chapter 41 as amended of the Workmen's Compensation Law, covering all operations under the contract, whether performed by him or by his subcontractors.

2. Liability and Property Damage Insurance limits of not less than:

$1,000,000.00 Each Person
$2,000,000.00 Each Accident
$2,000,000.00 Aggregate

for all damages arising during the policy period, shall be furnished in the following types:

a. Contractor's Liability Insurance: issued to and covering the liability for damage imposed by law upon each subcontractor with respect to all work performed by said subcontractor under the contract.
b. Contractor Protective Liability Insurance: issued to and covering the liability for damages imposed by law upon the Contractor with respect to all work under the contract performed for the Contractor by subcontractors.
c. Protective Liability Insurance: issued to and covering the liability for damages imposed by law upon the Owner.
d. Completed Operations Liability Insurance: issued to and covering the liability for damages imposed by law upon the Contractor between the date of final cessation of work and the date of final acceptance thereof.
e. Automobile Liability Insurance: covering all vehicles owned and hired in the amount of $500,000.00/$1,000,000.00 bodily injury and $1,000,000.00 property damage.
f. All Risk-Builders Risk Insurance provided in the amount equal to the total amount of the Bid.

1.13 NON-ASSIGNABILITY OF CONTRACT

Each Contractor is hereby prohibited from assigning, transferring, conveying, subletting or otherwise disposing of this contract, or of his right, title or interest therein, or his power to execute such contract to any other person, company, or corporation, without previous consent in writing of the Owner. If the Contractor shall, without previous written consent herein provided for, assign, transfer, convey, sublet, or otherwise dispose of same, or his right, title, or interest therein, or his power to execute such contract to any other person, company or other corporation, the Owner shall revoke and annul said contract, and the Owner shall thereupon be relieved and discharged from any and all liability and obligations, growing out of this contract to the Contractor and the person, company or other corporation to whom he shall assign, transfer, convey, sublet or otherwise dispose of same, and the Contractor and his assignees, transferees or sublessees, shall forfeit and lose all money theretofore

earned under said contract, except so much as may be required to pay his employees; provided that nothing herein contained shall be construed to hinder, prevent, or affect an assignment by the Contractor for the benefit of his creditors made pursuant to the statutes of the State of New York.

1.14 LAYOUT OF THE WORK

The prime Contractors shall verify all lines, levels and dimensions as shown on the drawings and shall report any errors or inconsistencies to the Architect before commencing work.

1.15 INQUIRIES

The Owner will not be responsible for any explanations or interpretations of the Construction Documents. All inquiries are to be directed to the office of Silvestri Architects.

1.16 COMPLIANCE WITH FEDERAL, STATE AND MUNICIPAL ORDINANCES

A. Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included therein, and if through omission or otherwise any such provision is not inserted, or it is not correctly inserted, it shall be physically amended to make such insertion.

B. These construction documents, and the joint and several phases of construction hereby contemplated are to be governed, at all time, by applicable provisions of the Federal law(s), including, but not limited to those statutes referred to elsewhere in this contract and the latest amendments thereto.

1.17 RESPONSIBILITY FOR DAMAGE

A. The Contractors shall be responsible for all damages to life and property due to his operations. He shall be responsible for all parts of his work, both temporary and permanent, until the work under this contract is accepted by the Owner.

B. He shall protect, indemnify, save harmless and defend the Owner from suits, actions, damages and costs of every name and description, resulting from the work under this contract, and the Owner may retain sufficient monies from the amount due or to become due the Contractor as may be necessary to satisfy any claim or damages filed against the Owner.

C. He shall be responsible for damages to work of other Contractors which are the result of his operations. Should the Contractor believe that the work shown by the drawings or specification is not calculated when executed to procure safe and substantial results, or if any discrepancy appears, it is his duty to immediately notify the Architect in writing, stop on same and await the written instructions of the Architect.

1.18 DEFECTIVE WORK AND MATERIALS

A. Any material or work found on inspection to be defective or not in strict conformance with

requirements of drawings and specifications, or defaced or injured through the acts of fire or elements or any other cause shall be removed immediately from the premises and satisfactory materials or work or both, substituted therefore without delay.

B. If the Contractor does not remove such work or materials condemned by the Architect within the time limit fixed by written notice, the Owner may cause the same to be done and may store all materials at the expense of the Contractor. If the Contractor does not pay the expense of such removal within ten (10) days written notice, sell such materials at auction, or at a private sale and shall account for the net proceeds thereof, after deducting all costs and expenses that should have been borne by the Contractor.

C. No previous inspection or certificates of payment shall be held as an acceptance of defective work or materials, or to relieve the Contractor from the obligations to furnish sound materials and perform satisfactory work in accordance with contract requirements.

1.19 SHOP DRAWINGS

A. The prime Contractors shall provide the Architect with three (3) prints and one (1) reproducible of all necessary shop drawings and information as may be required for the execution of the work. The manufacture or fabrication of any material or the performance of any work prior to approval of shop drawings will be entirely at the risk of the Contractor.

B. The Contractor shall submit to the Architect with such promptness as to cause no delay in his work or in that of any other Contractors employed on this work, copies of all shop or setting drawings required for the proper execution of the work herein specified.

C. Each shipment of drawings must be accompanied by a letter of transmittal, giving name of Contractor, list of drawings included, with each drawing marked with the name and location of project and each series of drawings numbered consecutively.

D. All shop drawings and samples be thoroughly checked by the Contractor for compliance with the Contract Documents before submitting them to the Architect for approval and all shop drawings shall bear the Contractor's stamp of approval certifying that they have so been checked. Any shop drawings submitted without this stamp of approval and certification, and shop drawings which, in the Architect's opinion, are incomplete contain numerous errors or have not been checked or only checked superficially will be returned unchecked by the Architect for resubmission by the Contractor. In checking shop drawings, the Contractor shall verify all dimensions and field conditions and shall check and coordinate the shop drawings of any section or trade with the requirements of all other sections or trades whose work is related thereto, as required for proper and complete installation of the work.

E. Shop drawings shall be submitted in the order and time required for construction. Shop drawings submitted ahead of time required for construction will be held by the Architect for checking in the order as above set forth.

F. Under no condition will any claim for delay in the completion of contracts due to shop drawings being held by the Architect for the necessary and proper time for checking be recognized.

G. If it is found necessary to make changes in shop drawings, two prints will be returned to the Contractor, who, after making correction indicated, shall furnish, without charge, four additional copies. The Contractor shall continue to furnish drawings as above mentioned until all drawings are satisfactory to the Architect, who, however, will not be responsible for their accuracy.

H. If, during the checking and return of checked prints, the Contractor makes any additional changes or corrections on the original shop drawings, he shall call attention to each marking on the prints by a letter written to the Architect.

I. It is understood that the approval (NO EXCEPTION TAKEN) of any shop drawings by the Architect in no way relieves the Contractor from assuming the responsibility for the accuracy of same, nor does it relieve the Contractor from any of the required conditions as set forth in these specifications or accompanying drawings.

J. Shop Drawings without the approved stamp of the Architect will not be permitted on the premises. Actual fabrication of the work will not proceed until these shop drawings have received the approved stamp of the Architect.

K. Shop Drawings shall consist of, but not be limited to, fabrication, erection and setting drawings, schedule drawings, manufacturer's scale drawings, wiring and control diagrams, cuts or entire catalogs, pamphlets, descriptive literature and performance and test data. Prior to submission of shop drawings on mechanical and electrical work, the Contractor shall submit lists of such equipment as required, for approval. Where practical, drawings shall be submitted in the form of a reproducible print, along with one set of white prints.

L. Reproductions of Contract Documents for use as shop drawings for materials specified and/or shown WILL NOT be permitted.

1.20 RECORD DRAWINGS

A. As Built Drawings

1. All subcontracts shall have prepared and submit at the completion of the project "As Built" drawings for their work as follows:
   a. One (1) set of reproducibles.
   b. One (1) set of white prints.

   The above will be at the Subcontractors expense.

B. Record Drawings

1. Maintain a white-print set (blue-line or black line) of Contract Drawings and shop drawings in clean, undamaged condition, with mark-up of actual installations which vary substantially from the work as originally shown. Mark whichever drawing is most capable of showing "field" condition fully and accurately; however, where shop drawings are used for mark-up, record a cross-reference at corresponding location on other colors to distinguish between variations in separate categories of work. Mark-up new information which is recognized to be of importance to Owner, but was for some reason not shown on either Contract Drawings or shop drawings. Give particular attention to concealed work, which would be difficult to measure and record at a later date. Note related change-order numbers where applicable. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on cover of each set.

C. Maintenance Manuals

1. Organize maintenance and operating manual information into suitable sets of manageable size, and bind into individual binders properly identified and indexed (thumb-tabbed). Include emergency instructions, spare parts listing, copies of warranties, wiring diagrams, recommended "turn-around" cycles, inspection procedures, shop drawings, product data, and similar applicable information. Bind each manual of each set in a heavy-duty 2", 3-ring vinyl-covered binder, and include pocket folders for folded sheet information. Mark identification on both front and spine of each binder.

1.21 SUBSTANTIAL COMPLETION AND DATE OF COMPLETION

A. A contract shall be deemed to be "substantially complete" when all work has been satisfactorily completed except for "punch list" items and those of a minor nature which may be, at the present time, beyond the Contractor's control, or delayed in completion with the concurrence of the Owner or Architect.

B. Final certificate will be issued when punch list items of final inspection are complete, with the exception of items that cannot be completed at once through no fault of the Contractor, or when certain pieces of punch list work are held up at Owner's or Architects request. If such items are, in the opinion of the Architect, substantial in nature, an amount sufficient to cover the reasonable cost of their correction as determined by the Architect, may be withheld from payment due under the final certificate until they have been corrected and subsequently approved by the Architect.

1.22 FINAL CERTIFICATE OF OCCUPANCY

A. The Construction Manager, prior to and before turning the building over to the Owner, shall apply for, and obtain a Certificate of Occupancy.

B. All required inspections for Certification of Occupancy by governmental agency shall be the responsibility of the Construction Manager.

1.23 RIGHT OF OCCUPANCY

A. The Owner shall have the right to take possession of any portion of the project after the Certificate of Substantial Completion and Certificate of Occupancy by the local building officials have been issued.

1.24 CLEAN-UP

A. Periodic Cleaning - The Subcontractors shall at all times, during construction, keep the site free from the accumulation of waste materials and rubbish, resulting from their respective work. Removal of waste materials and rubbish must be done at least once a week.

B. Final Clean-Up

1. Upon completion of the project the Subcontractors shall clean the interior and exterior of the building, so all areas are ready for occupancy by the Owner without need for further cleaning.

2. Provide final cleaning of the work, at time indicated, consisting of cleaning each surface or unit of work to normal "clean" condition expected for a first-class building cleaning and maintenance program. Comply with manufacturer's instruction for cleaning operations. The following are examples, but not by way of limitation, of cleaning levels required:
   a. Remove labels which are not required as permanent labels.
   b. Clean transparent materials, including mirrors and window/door glass, to a polished condition, removing substances which are noticeable as vision-obscuring materials. Replace broken glass and damaged transparent materials.
   c. Clean exposed exterior and interior hard-surfaced finished, to a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances. Except as otherwise indicated, avoid disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective condition.
   d. Wipe surfaces of mechanical and electrical equipment clean.
   e. Remove debris and surface dust from limited-access spaces.
   f. Vacuum clean carpeted surfaces and similar soft surfaces.
   g. Clean plumbing fixtures to a sanitary condition, free of stains including those resulting from water exposure.

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4 Clean light fixtures and lamps so as to function with full efficiency.

5. Clean project site (yard and grounds), including landscape development areas, of litter and foreign substances. Sweep paved areas to a broom-clean condition; remove stains, petrochemical spills and other foreign deposits. Rake grounds which are neither planted nor paved, to a smooth, even textured surface.

C. Damaged Work - Any damages to building materials, finishes or equipment, shall be repaired or replaced by the Subcontractor to the satisfaction of the Architect without cost to the Owner.

1.25 UNLOADING AT SITE

Materials shall be unloaded at the site at the expense of the Contractor furnishing such materials, unless otherwise specified.

1.26 OBLIGATION OF CONTRACTOR

At the time of awarding contracts, each Contractor will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Plans and Contract Documents (including all addenda). The failure or omission of any Contractor to receive or examine any form, instrument or document shall in no way relieve any Contractor from any obligation in respect of his contract.

1.27 ACCEPTANCE OF PRECEDING WORK

Before starting any operation the Prime Contractors shall examine work performed by others to which their work adjoins or is applied and shall report to the Architect any conditions that will prevent satisfactory accomplishment of their contract. Failure to notify the Architect in writing of deficiencies or fault in preceding work will constitute acceptance thereof and waive any claim of unsuitability.

1.28 WORK BY OWNER:

Purchase and installation of exterior signage. (Contractor to provide electrical connections to all exterior signage.)

1.29 SUB-SURFACE DATA

Sub-surface soil investigations have been made and results are incurred at the end of this section. Data shown is for general information of bidders and is not guaranteed. Bidders are expected to examine the site and record of investigations and then decide for themselves the character of the materials to be encountered. Geotechnical information and test pit exploration information is provided to allow the contractor adequate information to anticipate costs for footage/foundations and utility runs. No “add” change orders will be accepted for any work related to footage/foundations and utility runs.

END OF SECTION

SECTION 01045 - CUTTING AND PATCHING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Cutting and patching covers adjustment to, and necessary reworking of, elements of construction. The following definitions for cutting and patching apply to this Contract.

1. Cutting: Physical modification of construction work existing or removal of installed materials.

2. Patching: Restoration or replacement and installation of construction material, including finishing and patching.

B. Execute cutting (including excavating), fitting or patching of work, required to:

1. Make several parts fit properly.

2. Uncover work to provide for installation of ill-timed work.

3. Remove and correct defective work.

4. Remove and correct work not conforming to requirements of Contract Documents.

5. Remove samples of installed work as specified for testing.

C. Coordination

1. Coordinate the installation for Work to avoid cutting and patching in new construction.

D. In addition to contract requirements, upon written instructions of Architect/Engineer:

1. Uncover work to provide for Architect/Engineer's observation of covered work.

2. Remove samples of installed materials for testing.

3. Remove work to provide for alterations of existing work.

E. Do not endanger work by cutting or altering work or any part of it.

1.02 SUBMITTALS

A. Prior cutting which affects structural safety of project, submit written notice to Architect/Engineer requesting consent to proceed with cutting, including:

1. Identification of project.

2. Description of affected work.

3. Necessity for cutting.

4. Affect on other work, on structural integrity of project.

5. Description of proposed work. Designate:

   a. Scope of cutting and patching.
   b. Contractor and trades to execute work.
   c. Products proposed to be used.
   d. Extent of refinishing.

6. Alternatives to cutting and patching.

B. Should conditions of work, or schedule, indicate change of materials or methods, submit written recommendation to Architect/Engineer, including:

1. Conditions indicating change.
2. Recommendations for alternative materials or methods.
3. Submittals as required for substitutions.

C. Submit written notice to Architect/Engineer designating time work will be uncovered, to provide for observation.

1.03 CLOSEOUT SUBMITTALS

A. Upon completion of the Work of this Section, Contractor shall submit to the Architect/Engineer, all required closeout documents.

B. Contractor shall submit a marked-up set of drawings indicating any changes made during construction to the Architect/Engineer.

C. Upon completion, submit to the Architect/Engineer, a Contractor's Affidavit of Payment of Debts and Claims, and Release of Liens.

D. Refer to General Conditions for additional requirements.

PART 2 - PRODUCTS

2.01 MATERIALS FOR REPLACEMENT OF WORK REMOVED

A. Comply with specifications for type of work to be done.

PART 3 - EXECUTION

3.01 INSPECTION

A. Inspect existing condition for work, including elements subject to movement or damage

during removal of adjacent materials.

B. After uncovering work, inspect conditions effecting installation of new products.

3.02 PREPARATION: PRIOR TO CUTTING

A. Provide shoring, bracing and support as required to maintain structural integrity of project.

B. Provide protection for materials on adjacent surfaces.

C. Provide protection when work will be exposed to the elements.

3.03 PERFORMANCE

A. Execute fitting and adjustment of products to provide finished installation to comply with specified tolerances and finishes.

B. Restore work which has been cut or removed. Provide new products to complete work in accordance with requirements of Contract Documents.

C. Refinish entire surfaces as necessary to provide an even finish:

1. Continuous Surfaces: to nearest intersections.
2. Assembly: entire refinishing.

D. Fill and patch openings and holes in existing construction when bolts, piping, ducts, conduit and other penetrating items are removed.

END OF SECTION

SECTION 01300 - SUBMITTALS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Submit, to the Construction Manager for the Architect/Engineer's review, shop drawings, product data and samples required by the specification section.

1.02 SHOP DRAWINGS

A. Original drawings, prepared by Contractor, Subcontractor, supplier or distributor, which illustrate some portion of the work showing fabrication, layout, setting or erection details.

1. Identify details by reference to sheet and detail numbers shown on shop drawings.

2. Sheet size, multiple for 8-1/2 by 11 inches, not to exceed size of contract drawings when unfolded.

3. Reproduction for Submittals: Reproducible transparency with one opaque print.

4. Photographic reproductions of contract drawings will not be accepted as shop drawings and will be rejected.

1.03 PRODUCT DATA

A. Manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts and other standard descriptive data.

1. Modify product data to delete information which is not applicable to project.

2. Supplement standard to provide additional information applicable to project.

3. Clearly mark each copy to identify applicable materials, products or models.

4. Show dimensions and clearances required.

5. Show performance characteristics and capacities.

6. Show wiring or piping diagrams and controls.

1.04 SAMPLES

A. Physical examples to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged.

1. Office samples to be of sufficient size and quantity to clearly illustrate:

a. Functional characteristics of product or material, with related parts and method of attachment.

b. Full range of color samples.

2. Field Samples and Mock-Ups

a. Erect at project site at location acceptable to Construction Manager.

b. Construct samples or mock-up complete, including work of all trades required in finish work.

1.05 CONTRACTOR RESPONSIBILITIES

A. Do not start, fabricate or install work requiring submittals until submittals meeting Contract Requirements have been returned to the Contractor.

B. Review, approve, stamp and sign shop drawings, product data and samples prior to submission.

C. Verify

1. Field measurements.
2. Field construction criteria.
3. Catalog numbers and other data.

D. Coordinate each submittal with requirements of Work and Contract Documents.

E. Contractor's responsibility for errors and omissions in submittals is not relieved by Construction Manager's or Architect/Engineer's review of submittals.

F. Contractor's responsibility for deviations in submittals from requirements of Contract Documents is not relieved by Construction Manager's or Architect/Engineer's review of submittals unless Architect/Engineer gives written acceptance of the specific deviations.

G. Notify Construction Manager and Architect/Engineer in writing, at time of submission of deviations in submittals from requirements of Contract Documents.

H. After Construction Manager and Architect/Engineer's review, Contractor is to distribute copies of submittals to parties requiring same for coordination of work.

I. Make required copies for distribution of shop drawings and product data that have been stamped and signed by the Architect/Engineer.

1.06 SUBMISSION REQUIREMENTS

A. Schedule submissions to allow 10 working days for review.

B. Submit one reproducible transparency and one diazo print of shop drawings.

C. Submit number of copies of product data that will be required for distribution plus two copies that will be retained by Construction Manager and Architect/Engineer.

D. Submit number of samples specified in each technical section.

E. Accompany submittal with transmittal letter, containing:

1. Date.
2. Construction Manager's project title and number.
3. Architect/Engineer's project title and number.
4. Contractor's name and address.
5. Notification of deviations from Contract Documents.
6. Additional pertinent data.

F. Submittals shall include:

1. Date and revision dates.
2. Construction Manager's project title and number.
3. Architect/Engineer's project title and number.
4. The names of:
   a. Architect/Engineer.
   b. Contractor.
   c. Subcontractor.
   d. Supplier.
5. Identification of product.
6. Relation to adjacent structure or materials.
7. Field dimensions, clearly identified as such.
8. Technical Specification section number.
9. Applicable standards.
10. Two blank spaces, 4 x 4 inches, for the Construction Manager's and Architect/Engineer stamp.
11. Identification of deviations from Contract Documents.

12. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field measurements and compliance with Contract Documents.
    a. Submittals without Contractor's stamp will be returned without being reviewed.

G. Shop Drawing Submittal Cover Sheet

1. Attach submittal cover sheet, with all blanks filled in for each shop drawing, product data and sample.

1.07 RESUBMISSION REQUIREMENTS

A. Shop Drawings

1. Revise initial drawings as required and resubmit as specified for initial submittal.

2. Indicate on drawings changes which have been made other than those requested by the Architect/Engineer.

B. Product Data and Samples: Submit new data and samples as required for initial submittal.

1.08 CONTRACTOR'S DISTRIBUTION OF SUBMITTALS

A. Distribute copies of shop drawings and product data which carry the Construction Manager and Architect/Engineer stamp to:

1. Contractor's file.
2. Job site file.
3. Record Document file.
4. Other Contractors, as required for coordination.
5. Subcontractors, as required for coordination.
6. Supplier.
7. Fabricator.

B. Distribute samples as directed by Architect/Engineer.

1.09 ARCHITECT/ENGINEER

A. Review design concept of Project.

B. Review of separate items does not constitute review of an assembly in which item functions.

C. Stamp and initial or sign certifying to review of submittal.

D. Explanation of Architect/Engineer's Stamp

1. NO EXCEPTION TAKEN: No corrections, no marks.
2. MAKE CORRECTIONS NOTED: Minor amount of corrections; all items can be fabricated at Contractor's risk without further correction; checking is complete and all corrections are obvious without ambiguity.
3. REVISE AND RESUBMIT: Minor amount of corrections; noted items must not be fabricated without further correction; checking is not complete; details of items noted by checker are to be further clarified; items not noted to be corrected can be fabricated at Contractor's risk under this stamp.
4. REJECTED: Drawings are rejected as not in accordance with the Contract, too many corrections, or other justifiable reason. The drawing must be corrected and resubmitted. No items are to be fabricated under this stamp.
5. SUBMIT SPECIFIED ITEM: Item is not as specified. Submit named manufacturer.

E. Return submittals to Construction Manager for distribution.

1.10 SUBMITTALS REQUIRED FOR REVIEW

A. Contractor is responsible for reviewing each section to determine required submittals.

1.11 CLOSEOUT SUBMITTALS

A. Upon completion of the Work of this Section, Contractor shall submit to the Construction Manager, all required closeout documents.

B. Contractor shall submit a marked-up set of drawings indicating any changes made during construction to the Construction Manager.

C. Upon completion, submit to the Construction Manager, a Contractor's Affidavit of Payment of Debts and Claims, and Release of Liens.

D. Refer to General Conditions for additional requirements.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

SECTION 01650 - MISC. REMOVALS, ALTERATIONS AND REHABILITATION WORK

1.0 GENERAL

1.1 REMOVALS REQUIRED

The existing work required to be removed shall be in general as indicated, but shall also include any and all other existing materials or work necessary to install the new work as shown and specified; to connect same with the existing work in an approved manner, leaving the work in finished, neat and substantial condition, matching all existing surfaces where new work abuts or joins existing work.

Removals shall be conducted in a timely manner so as to facilitate construction.

All material removed becomes the property of the Contractor unless otherwise indicated and shall be promptly removed from the site.

Should any damage occur during the progress of the work to any buildings or fixtures, equipment or appurtenances therein, said damage must be properly repaired without extra cost.

Removal shall be conducted in strict accordance with all laws, ordinances and codes having jurisdiction.

During removal operations, provide dust partitions, etc. to protect adjacent areas and occupants from rising dirt and dust.

1.2 ALTERATIONS

The Contractor shall make alterations to existing construction and finishes as required for the execution of the contract work. The Contractor shall do all cutting, patching, repairing, and refinishing so as to leave such construction and finishes complete and in a condition satisfactory to the Architect.

Cutting, patching and repairing shall be neatly and carefully done, and new materials and methods shall match existing corresponding work unless otherwise shown or specified. Exposed patches and repairs shall be as inconspicuous as possible.

Existing construction, finishes, equipment, etc., that are to remain and which are damaged or defaced by reason of work done under this contract shall be restored by the Contractor to a condition satisfactory to the Architect, or replaced with new, at no additional cost to the Owner.

Existing surfaces and work shall be prepared as necessary to receive the new construction and finishes. Such preparatory work shall be as required by the conditions, and in each case shall be subject to approval by the Architect.

Newly exposed work or surfaces which are presently concealed shall be made to match existing

corresponding or adjoining new surfaces as directed, and the materials and methods to be employed shall be subject to approval by the Architect.

All new, altered, or restored work shall match existing corresponding work in material, construction, finish, etc., unless otherwise specified or required by the drawings.

1.3 VERIFICATION OF MEASUREMENTS

Before ordering any material or doing any work, this Contractor shall verify all measurements at building and shall be responsible for the correctness of same. No extra charge or compensation will be allowed on account of difference between actual dimensions and the measurements indicated on the drawings, any difference which may be found shall be submitted to the Architect for consideration before proceeding with the work.

1.4 MAINTAINING TRAFFIC

Do not close or obstruct streets, roads, drives or store material on sidewalks, passageways or right-of-ways. Maintain access to and from adjacent buildings.

Conduct operations with minimum interference with roads, streets, driveways, sidewalks, etc.

Provide, erect, and maintain lights, barriers, etc., as may be required to maintain traffic.

1.5 PROTECTION

Protect adjacent property against damages which might occur from falling debris or other cause. Take Precautions to guard against movement or settlement of adjacent building. Provide and place bracing and shoring as required. If at any time safety of adjacent structures appear to be endangered, cease operations and notify the Architect. If additional shoring or bracing is required din the opinion of the Architect, it shall be furnished without additional cost.

No materials or debris shall be burned on the premises.

1.6 DISPOSAL

All debris shall be disposed of off-site in a legal manner.

1.7 SALVAGEABLE ITEMS

The owner has the right to all salvageable items. Verify with owner all items to be removed and relocated per Owner's directions. All removed items not wanted by owner shall be disposed of off-site.

2.0 PRODUCTS

Not Applicable.

3.0 EXECUTION

3.1 DEMOLITION PROCEDURE

Material and debris resulting from demolition shall be removed from the premises as rapidly as possible.

3.2 SHORING AND BRACING

All work to remain shall be adequately shored and braced as required, to prevent damage or injury.

SECTION 01700 - PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION

A. Related Requirements Specified Elsewhere

1. Project Record Documents: Section 01720.
2. Closeout Submittals Required of Trades: The respective sections of specifications.

1.02 SUBSTANTIAL COMPLETION

A. Contractor

1. Submit written notice to Construction Manager that Project, or designated portion of Project, is Substantially Complete.
2. Submit list of major items to be completed or corrected.

1.03 INSPECTION

A. Contractor shall submit written certification that:

1. Contract Documents have been reviewed.
2. Project is completed and is in compliance with Contract Documents.
3. Equipment and systems have been tested in presence of Owner's Representative and are operational.

B. Construction Manager will make final inspection within seven days after receipt of certification.

C. Should Construction Manager consider that Work is finally complete in accordance with requirements of Contract Documents, he shall request Contractor to make Project Closeout submittals.

1.04 CLOSEOUT SUBMITTALS

A. Upon completion of the Work of this Section, Contractor shall submit to the Construction Manager, all required closeout documents.

B. Contractor shall submit a marked-up set of drawings indicating any changes made during construction to the Construction Manager.

C. Upon completion, submit to the Construction Manager, a Contractor's Affidavit of Payment of Debts and Claims, and Release of Liens.

D. Refer to General Conditions for additional requirements.

1.05INSTRUCTION OF OWNER'S REPRESENTATIVE

A. Before final acceptance, thoroughly instruct a designated representative of the Owner in the proper operation of all systems and apparatus installed under this contract.

B. The Contractor shall prepare and forward to the Construction Manager at the completion of the job three brochures, each neatly bound, of the following items.

1. Typed or printed instructions covering the care and operation of mechanical and electrical equipment furnished and installed under this Contract.
2. Manufacturer's instruction books, diagrams, and spare parts lists covering all equipment.
3. All approved shop drawings.
4. Air and water systems balancing reports.
5. Certificates of compliance and inspection.

C. Each brochure shall be a hard cover, three-ring binder or binders.

1.06EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

A. Contractor's Affidavit of Payment of Debts and Claims: AIA G706.

B. Contractor's Affidavit of Release of Liens: AIA G706A, with:

1. Consent of Surety to Final Payment: AIA G707.
2. Separate written releases of waivers of liens for subcontractors, suppliers, and others with lien rights against property of Owner, together with list of those parties.
3. Contractor's written release or waiver of lien upon payment to the Contractor pursuant to New York State Lien Law.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

SECTION 01720 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Related Requirements Specified Elsewhere

1. Shop Drawings, Product Data and Samples: Section 01300.

1.02 MAINTENANCE OF DOCUMENTS

A. Maintain, at job site, one copy of:

1. Contract Drawings
2. Project Manual
3. Addenda
4. Approved Shop Drawings, Product Data, and Samples
5. Supplemental Instructions
6. Other Modifications to Contract
7. Field Test Records
8. Correspondence File

B. Store documents in approved locations, apart from documents used for construction.

C. Provide files and racks for storage of documents.

D. Maintain documents in clean, dry, legible conditions.

E. Do not use record documents for construction purposes.

F. Make documents available at all times for inspection by Construction Manager, Architect/Engineer, and Owner.

G. File documents in accordance with Table of Contents of Project Manual.

1.03 MARKING DEVICES

A. Provide felt marking pen for marking, conforming to following color code:

1. Red for general construction work.
2. Blue for plumbing work.
3. Green for heating, ventilating work.
4. Brown for electrical work.
5. Black for other written notations.
6. Orange for sitework.

1.04 RECORDING

A. Label each document "PROJECT RECORD" in 2 inch high printed letters.

B. Keep record documents current.

C. Do not permanently conceal any work until required information has been recorded.

D. Contract Drawings

1. Legibly mark to record actual construction:

a. Depths of various elements of foundation in relation to the finish floor.

b. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.

c. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.

d. Field changes of dimension and detail.

e. Changes made by Supplemental Instructions or Change Order.

f. Details not on original Contract Drawings as directed by the Construction Manager.

E. Specifications and Addenda

1. Legibly mark-up each section to record:

a. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.

b. Changes made by Supplemental Instructions or Change Order.

c. Other matters not originally specified.

F. Shop Drawings, Product Data and Samples: Maintain as record documents. Legibly mark-up approved submittals to show changes made after review.

1.05 SUBMITTAL

A. At completion of project or your portion of work, deliver record documents to Construction Manager.

B. Accompany submittal with transmittal letter, in duplicate containing:

1. Date
2. Project title and number
3. Contractor's name and address
4. Title and number of each record document
5. Certification that each document as submitted is complete and accurate
6. Signature of Contractor, or his authorized representative.

1.06CLOSEOUT SUBMITTALS

A. Upon completion of the Work of this Section, Contractor shall submit to the Construction Manager, all required closeout documents.

B. Contractor shall submit a marked-up set of drawings indicating any changes made during construction to the Construction Manager.

C. Upon completion, submit to the Construction Manager, a Contractor's Affidavit of Payment of Debts and Claims, and Release of Liens.

D. Refer to General Conditions for additional requirements.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

SECTION 01730 - OPERATIONS AND MAINTENANCE DATA

1.0 GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Shop Drawings, Product Data and Samples: Section 01300.

B. Maintenance Manuals for mechanical and electrical work: Division 15 and 16.

1.2 DESCRIPTION

A. Manuals: Purpose

1. Operation and maintenance manuals will be used for training of, and use by, Owner's personnel in operation and maintenance of mechanical and electrical systems and equipment. A separate manual or chapter within a manual shall be prepared for each class of equipment or system.

2. For additional requirements refer to various specification sections.

B. Required: Manuals are required for all systems and equipment.

C. Contents: Each manual or chapter shall include:

1. Table of contents.
2. Description of system or equipment.
3. Operating sequence and procedures
4. Safety instructions
5. Maintenance instructions and requirements, including preventative and corrective maintenance.
6. Spare parts list.

D. Shop Drawings: Each manual shall be accompanied by shop drawings of the system or equipment as installed.

E. Copies

1. Submit three (3) copies of manuals to Architect for review.
2. After Architect's review, he will submit two (2) copies of manuals to Owner for review and acceptance prior to final payment.

F. Instructions of Owner's Personnel

1. Fully instruct Owner's designated operating and maintenance personnel in operating, adjustments and maintenance of all mechanical and electrical systems and equipment as required by respective and pertinent sections, after all final inspection, tests and repairs have been completed.

2. Operating and maintenance manuals shall constitute the basis of instructions. Contents of manual shall be reviewed in full detail, explaining all aspects of operations and maintenance.

3. Prepare and include additional data when need for such data becomes apparent during instruction and training sessions.

4. Training sessions shall be jointly arranged with Owner during Contractor's normal week and daily hours. The Owner shall have the responsibility of scheduling its shift work personnel accordingly.

5. Owner and Contractor shall coordinate and cooperate to keep training sessions to a reasonable minimum.

1.3 INSTRUCTIONS FOR MAINTENANCE OF SURFACES

A. Purpose: To instruct Owner's maintenance personnel in proper methods and materials to use in the proper care of all exposed surfaces.

B. Content

1. Recommended cleaning materials.
2. Recommended preventative maintenance.
3. Recommended methods and procedures.

C. Copies

1. Submit three (3) copies of Instructions for Maintenance to Architect for review.

2. After Architect's review, he will submit two (2) copies of Instructions for Maintenance to Owner for review and acceptance prior to final payment.

2.0 PRODUCTS - NOT USED

3.0 EXECUTION - NOT USED

END OF SECTION

SECTION 01750 - WARRANTIES

1.0 GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Operation and Maintenance Data: Section 01730

1.2 DESCRIPTION

A. Warranties shall include

1. One (1) year warranty as required by General Conditions.

2. Extended warranties required by various specification sections.

B. Submit warranties to Architect for his review.

C. After Architect's review, he will submit warranties to Owner for review and acceptance, prior to final payment.

2.0 PRODUCTS - NOT USED

3.0 EXECUTION - NOT USED

SECTION 04200 - UNIT MASONRY

1.0 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of 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. Concrete unit masonry.

B. Products installed but not furnished under this Section include the following:

1. Reinforcing bars - Section 03310.
2. Steel lintels in unit masonry are specified in Division 5 Section "Metal Fabrications."
3. Wood nailers and blocking built into unit masonry are specified in Division 6 Section "Rough Carpentry."
4. Reglets in masonry joints for metal flashing are specified in Division 7 Section "Flashing and Sheet Metal."
5. Core insulation – Section 07200.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

A. Provide unit masonry that develops the following installed compressive strengths (f'm):

1. For concrete unit masonry: As follows:
   a. f'm = 1500 psi.

1.4 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

1. Product data for each different masonry unit, accessory, and other manufactured product indicated.

2. Samples for verification purposes of the following:
   a. Include size variation data verifying that actual range of sizes for brick falls within ASTM C 216 dimension tolerances for brick where modular dimensioning is indicated.
   b. Full size unit of brick.

c. Colored masonry mortar samples for each color required showing the full range of colors expected in the finished construction. Label samples to indicate type and amount of colorant used.
d. Plastic weep holes/vents.
e. Accessories embedded in the masonry.

3. Material certificates for the following signed by manufacturer and Contractor certifying that each material complies with requirements.
   a. Each different cement product required for mortar and grout including name of manufacturer, brand, type, and weight slips at time of delivery.
   b. Each type and size of joint reinforcement.
   c. Each type and size of anchors, ties, and metal accessories.

4. Material test reports from a qualified independent testing laboratory employed and paid by Contractor indicating and interpreting test results relative to compliance of the following proposed masonry materials with requirements indicated:
   a. Mortar complying with property requirements of ASTM C 270.
   b. Grout mixes. Include description of type and proportions of grout ingredients.
   c. Masonry units.

5. Cold-weather construction procedures evidencing compliance with requirements specified in referenced unit masonry standard.

6. Hot-weather construction procedures evidencing compliance with requirements specified in referenced unit masonry standard.

7. Qualification data for firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, telephone numbers, names of Architects and Owners, and other information specified.

8. Results from tests and inspections performed by Owner's representatives will be reported promptly and in writing to Architect and Contractor.

1.5 QUALITY ASSURANCE

A. Unit Masonry Standard: Comply with ACI 530.1/ASCE 6 "Specifications for Masonry Structures," except as otherwise indicated.

1. Revise ACI 530.1/ASCE 6 to exclude Sections 1.4 and 1.7; Parts 2.1.2, 3.1.2, and 4.1.2; and Articles 1.5.1.2, 1.5.1.3, 2.1.1.1, 2.1.1.2, and 2.3.3.9 and to modify Article 2.1.1.4 by deleting requirement for installing vent pipes and conduits built into masonry.

B. Single-Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.

C. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver masonry materials to project in undamaged condition.

B. Store and handle masonry units off the ground, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not place until units are in an air-dried condition.

C. Store cementitious materials off the ground, under cover, and in dry location.

D. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

E. Store masonry accessories including metal items to prevent corrosion and accumulation of dirt and oil.

1.7 PROJECT CONDITIONS

A. Protection of Masonry: During erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.

2. Where one wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.

B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Remove immediately any grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.

2. Protect sills, ledges, and projections from mortar droppings.

3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes from mortar droppings.

C. Cold-Weather Construction: Comply with referenced unit masonry standard for cold-weather construction and the following:

1. Do not lay masonry units that are wet or frozen.
2. Remove masonry damaged by freezing conditions.

D. Hot-Weather Construction: Comply with referenced unit masonry standard.

1.8 CLOSEOUT SUBMITTALS

A. Upon completion of the Work of this Section, Contractor shall submit to the Construction Manager, all required closeout documents.

B. Contractor shall submit a marked-up set of drawings indicating any changes made during construction to the Construction Manager.

C. Upon completion, submit to the Construction Manager, a Contractor's Affidavit of Payment of Debts and Claims, and Release of Liens.

D. Refer to General Conditions for additional requirements.

2.0 PRODUCTS

2.1 MATERIALS, GENERAL

A. Comply with referenced unit masonry standard and other requirements specified in this Section applicable to each material indicated.

2.2 CONCRETE MASONRY UNITS

A. General: Comply with requirements indicated below applicable to each form of concrete masonry unit required.

1. Size: Provide concrete masonry units complying with requirements indicated below for size that are manufactured to specified face dimensions within tolerances specified in the applicable referenced ASTM specification for concrete masonry units.
   a. Concrete Masonry Units: Manufactured to specified dimensions of 3/8 inch less than nominal widths by nominal heights by nominal lengths indicated on drawings provided. Scored concrete block at all exterior walls.
   b. Concrete Building Brick: Specified dimensions as follows:

(1) Standard Modular: 3-5/8 inches wide by 11-5/8” inches high by 23-5/8” inches long.

2. Provide Type I, moisture-controlled units.

B. Hollow Load-Bearing Concrete Masonry Units: ASTM C 90, Grade N and as follows:

1. Unit Compressive Strength: Provide units with minimum average net area compressive strength indicated below:
   a. 2500 psi.
   b. Not less than the unit compressive strengths required to produce concrete unit masonry construction of compressive strength indicated.

2. Weight Classification: Lightweight.

C. Concrete Building Brick: ASTM C 55 and as follows:

1. Unit Compressive Strength: Provide units with minimum average net area compressive strength indicated below:
   a. Not less than the unit compressive strengths required to produce concrete unit masonry construction of compressive strength indicated.
   b. Weight Classification: Lightweight.

D. Split Face Concrete Block
Building Color: Match existing.

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. Provide natural color or white cement as required to produce required mortar color.

B. Masonry Cement: ASTM C 91

1. For colored pigmented mortars use premixed colored masonry cements of formulation required to produce color indicated, or if not indicated, as selected from manufacturer's standard formulations.

C. Ready-Mixed Mortar: Cementitious materials, water, and aggregate complying with requirements specified in this article, combined with set-controlling admixtures to produce a ready-mixed mortar complying with ASTM C 1142.

D. Hydrated Lime: ASTM C 207, Type S.

E. Aggregate for Mortar: ASTM C 144, except for joints less than 1/4 inch use aggregate graded with 100 percent passing the No. 16 sieve.

1. Colored Mortar Aggregates: Ground marble, granite, or other sound stone, as required to match Architect's sample.

F. Aggregate for Grout: ASTM C 404.

G. Colored Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with record of satisfactory performance in masonry mortars. Color of mortar shall be white.

H. Water: Clean and potable.

I. Products: Subject to compliance with requirements, provide one of the following:

1. Colored Masonry Cement:
2. Glen-Gery Color Mortar Blend
3. "Colorbond Custom Color Masonry Cement," Centurion.
4. "Atlas Custom Color Masonry Cement," Lehigh Portland Cement Co.
5. "Flamingo Color Masonry Cement," The Riverton Corporation.

2.5 JOINT REINFORCEMENT

A. General: Provide joint reinforcement complying with requirements of referenced unit masonry standard and this article, formed from the following:

1. Galvanized carbon steel wire hot dip zinc coating, ASTM 153-B2.

B. Description: Welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10 feet, with prefabricated corner and tee units, and complying with requirements indicated below:

1. Wire Diameter for Side Rods: 0.1483 inch (9 gage).
2. Wire Diameter for Cross Rods: 0.1483 inch (9 gage).
3. For single-wythe masonry provide type as follows with single pair of side rods:

a. Truss design with continuous diagonal cross rods spaced not more than 16 inches o.c.
b. Concrete block and brick wythes separated by an insulated cavity, coursing aligned:
(1) Truss type with box ties, containing drips, welded at 16" o.c., equal to “AA Wire Products #AA660 or “Ty-Wal Cavity Truss Tab-Ty” with V-Drip.

C. Manufacturers: Subject to compliance with requirements, provide joint reinforcement by one of the following:

1. AA Wire Products Co.
2. Dur-O-Wal, Inc.
3. Heckman Building Products, Inc.
4. Hohmann & Barnard, Inc.
5. National Wire Products Industries.

2.6 TIES AND ANCHORS, GENERAL

A. General: Provide ties and anchors specified in subsequent articles that comply with requirements for metal and size of referenced unit masonry standard and of this article.

B. Galvanized Carbon Steel Wire: ASTM A 82, coating class as required by referenced unit masonry standard for application indicated.

C. Galvanized Steel Sheet: ASTM A 366 (commercial quality) cold-rolled carbon steel sheet, hot-dip galvanized after fabrication to comply with ASTM A 525, Class B2 (for unit lengths over 15 inches) and Class B3 (for unit lengths under 15 inches), for sheet metal ties and anchors.

1. Thickness of Steel Sheet Galvanized After Fabrication: Uncoated thickness of steel sheet hot-dip galvanized after fabrication:
   a. 0.0747 inch (14 gage).

D. Steel Plates and Bars: ASTM A 36, hot-dip galvanized to comply with ASTM A 123 or ASTM A 153, Class B3, as applicable to size and form indicated.

E. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. AA Wire Products Co.
2. Dur-O-Wal, Inc.
3. Heckman Building Products, Inc.
4. Hohmann & Barnard, Inc.
5. National Wire Products Industries

2.7 EMBEDDED FLASHING MATERIALS

A. Laminated Flashing: Manufacturer's standard laminated flashing of type indicated below:

1. Copper-Fabric Laminate: Copper sheet of weight per sq. ft. indicated below, bonded with asphalt between 2 layers of glass fiber cloth.
   a. Weight: 3 oz.

B. Asphalt-Coated Copper Flashing: Manufacturer's standard product consisting of sheet copper of weight per sq. ft. indicated below coated with flexible asphalt.

1. Weight: 3 oz.

2. Application: Use where flashing is fully concealed in masonry.

C. Adhesive for Flashings: Of type recommended by manufacturer of flashing material for use indicated.

D. Products: Subject to compliance with requirements, provide one of the following:

1. Asphalt-Coated Copper Flashing:

a. "Cop-A-Cote," Afco Products Inc.
b. "Type ACC-Asphalt Bituminous Coated," Phoenix Building Products.
c. "Coated Copper Flashing," Sandell Manufacturing Co., Inc.
(1) "Copperseal," York Manufacturing, Inc.

2.8 MISCELLANEOUS MASONRY ACCESSORIES

A. Weep Holes: Provide the following:

1. Round Plastic Tubing: Medium-density polyethylene, 3/8-inch outside diameter by 4 inches long.

2. Products: Subject to compliance with requirements, provide one of the following weep hole/ventilators:
a. Plastic Weep Hole/Vent:
1. "Cell Vent," Dur-O-Wal, Inc.

2.9 MORTAR AND GROUT MIXES

A. General: Do not add admixtures including coloring pigments, air-entraining agents, accelerators, retarders, water repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

B. Mortar for Unit Masonry: Comply with ASTM C 270, Property Specification for job-mixed mortar and ASTM C 1142 for ready-mixed mortar, of types indicated below:

1. Limit cementitious materials in mortar to portland cement-lime.

2. For masonry below grade and in contact with earth, and where indicated, use type indicated below:
a. Type S.

3. For exterior, above-grade non-loadbearing walls and parapet walls; for interior loadbearing walls; for interior non-loadbearing partitions, and for other applications where another type is not indicated, use type indicated below:

a. Type N.

C. Grout for Unit Masonry: Comply with ASTM C 476 and referenced unit masonry standard. Compression strength of 18 days shall be 3000 psi.

3.0 EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other specific conditions, and other conditions affecting performance of unit masonry.

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of unit masonry.

B. Examine rough-in and built-in construction to verify actual locations of piping connections prior to installation.

C. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Comply with referenced unit masonry standard and other requirements indicated applicable to each type of installation included in Project.

B. Thickness: Build cavity and other masonry construction to the full thickness shown. Build single-wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.

C. Build chases and recesses as shown or required to accommodate items specified in this and other Sections of the Specifications. Provide not less than 8 inches of masonry between chase or recess and jamb of openings and between adjacent chases and recesses.

D. Leave openings for equipment to be installed before completion of masonry. After installation of equipment, complete masonry to match construction immediately adjacent to the opening.

E. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining construction. Use full-size units without cutting where possible.

3.3 CONSTRUCTION TOLERANCES

A. Comply with construction tolerances of referenced unit masonry standard.

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint widths and for accurate locating of openings, movement-type joints, returns, and offsets. Avoid the use of less-than-half-size units at corners, jambs, and where possible at other locations.

B. Lay up walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other construction.

C. Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with less that nominal 4-inch horizontal face dimensions at corners or jambs.

1. One-half running bond with vertical joint in each course centered on units in courses above and below.

D. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

E. Stopping and Resuming Work: In each course, rack back 1/2-unit length for one-half running bond or 1/3-unit length for one-third running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly (if required), and remove loose masonry units and mortar prior to laying fresh masonry.

F. Built-In Work: As construction progresses, build-in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.

1. Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.

G. Concrete block directly supporting steel lintels shall have cores filled with mortar.

3.5 REINFORCED MASONRY

A. In addition to the above, provide the following for reinforced masonry:

1. Securely position all vertical reinforcing at the center of the block unit.

2. Provide cleanout openings at the bottom of all grouted and reinforced cores. After inspection, these openings shall be closed and braced to adequately resist the pressure of the fluid grout.

3. Remove all mortar projections from the cells to be grouted.

4. Remove all mortar droppings and debris from foundation bearing surface and reinforcing bars.

3.6 MORTAR BEDDING AND JOINTING

A. Lay hollow concrete masonry units as follows:

1. With full mortar coverage on horizontal and vertical face shells.

2. Bed webs in mortar in starting course on footings and where adjacent to cells or cavities to be filled with grout.

B. Cut joints flush for masonry walls to be concealed or to be covered by other materials, unless otherwise indicated.

3.7 CAVITIES/AIR SPACES

A. Keep cavities/air spaces clean of mortar droppings and other materials during construction. Strike joints facing cavities/air spaces flush.

B. Tie exterior wythe to backup with individual metal ties. Stagger alternate courses.

C. Tie exterior wythe to backup with continuous horizontal joint reinforcing.

D. Install vents in vertical head joints at the top of each continuous cavity/air space. Space vents and close off cavities/air spaces vertically and horizontally with blocking in manner indicated.

3.8 HORIZONTAL JOINT REINFORCEMENT

A. General: Provide continuous horizontal joint reinforcement as indicated. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcing a minimum of 6 inches.

B. Cut or interrupt joint reinforcement at control joints, unless otherwise indicated.

C. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend reinforcement units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.9 MOVEMENT (CONTROL AND EXPANSION) JOINTS

A. General: Install control joints in unit masonry where indicated. Build in related items as the masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement.

B. Form control joints in concrete masonry as follows:

1. Fit bond breaker strips into hollow contour in ends of block units on one side of control joint. Fill the resultant core with grout and rake joints in exposed faces.

2. Build in joint fillers where indicated.

3. Form open joint of width indicated but not less than 3/8 inch for installation of sealant and backer rod specified in Division 7 Section "Joint Sealers." Maintain joint free and clear of mortar.

C. Build in horizontal pressure-relieving joints where indicated; construct joints by either leaving an air space or inserting nonmetallic 50 percent compressible joint filler of width required to permit installation of sealant and backer rod specified in Division 7 Section "Joint Sealers."

1. Locate horizontal pressure-relieving joints beneath shelf angles supporting masonry veneer and attached to structure behind masonry veneer.

3.10 LINTELS

A. Install steel lintels where indicated.

B. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.11 FLASHING/WEEP HOLES

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

B. Prepare masonry surfaces so that they are smooth and free from projections that could puncture flashing. Place through-wall flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing with adhesive/sealant/tape as recommended by flashing manufacturer before covering with mortar.

C. Install flashings as follows:

1. At lintels and shelf angles, extend flashing a minimum of 4 inches into masonry at each end. Extend flashing from exterior face of outer wythe of masonry, through the outer wythe, turned up a minimum of 4 inches, and through the inner wythe to within 1/2 inches of the interior face of the wall in exposed masonry. Where interior surface of inner wythe is concealed by furring, carry flashing completely through the inner wythe and turn up approximately 2 inches, unless otherwise indicated.

2. At heads and sills, extend flashing as specified above unless otherwise indicated but turn up ends not less than 2 inches to form a pan.

3. Install flashing in masonry veneer walls as specified above but carry flashing up face of sheathing at least 8 inches and behind air infiltration barrier.

D. Install weep holes in the head joints in exterior wythes of the first course of masonry immediately above embedded flashings and as follows:

1. Form weep holes with product specified in Part 2 of this Section.
2. Form weep holes by keeping head joints free and clear of mortar.
3. Space weep holes 24 inches o.c.

3.12 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units. Install new units to match adjoining units and in fresh mortar or grout, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point-up all joints including corners, openings, and adjacent construction to provide a neat, uniform appearance, prepared for application of sealants.

C. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

2. Test cleaning methods on sample wall panel; leave 1/2 panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.

3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.

D. Protection: Provide final protection and maintain conditions, in a manner acceptable to Installer, that ensure unit masonry is without damage and deterioration at time of Substantial Completion.

END OF SECTION

SECTION 05500 - METAL FABRICATION

1.0 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This section includes the following metal fabrications:

1. Rough hardware.
2. Loose steel lintels.
3. Miscellaneous framing and supports for the following:
   a. Applications where framing and supports are not specified in other sections.
4. Steel pipe railings.

B. Related Sections: The following sections contain requirements that relate to this section:

1. Division 5 Section "Structural Steel" for structural steel framing systems components.

1.3 DEFINITIONS

A. Definitions in ASTM E 985 for railing-related terms apply to this section.

1.4 SYSTEM PERFORMANCE REQUIREMENTS

A. Structural Performance of Handrails and Railing Systems: Design, engineer, fabricate and install handrails and railing systems to comply with requirements of ASTM E 985 for structural performance based on testing performed in accordance with ASTM E 894 and E 935.

1.5 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Product data for products used in miscellaneous metal fabrications, including paint products and grout.

C. Shop drawings detailing fabrication and erection of each metal fabrication indicated. Include

plans, elevations, sections and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other sections.

D. Samples representative of materials and finished projects as may be requested by Architect.

E. Welder certificates signed by Contractor certifying that welders comply with requirements specified under "Quality Assurance" article.

F. Qualification data for firms and persons specified in "Quality Assurance" article to demonstrate their capabilities and experience. Include list of completed projects with project name, addresses, names of Architects and Owners, and other information specified.

1.6 QUALITY ASSURANCE

A. Fabricator Qualifications: Firm experienced in successfully producing metal fabrications similar to that indicated for this Project, with sufficient production capacity to produce required units without causing delay in the Work.

B. Installer Qualifications: Arrange for installation of metal fabrications specified in this section by same firm that fabricated them.

C. Qualify welding processes and welding operators in accordance with AWS D1.1 "Structural Welding Code - Steel," D1.3 "Structural Welding Code - Sheet Steel", and D1.2 "Structural Welding Code - Aluminum."

1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1.7 CLOSEOUT SUBMITTALS

A. Upon completion of the Work of this Section, Contractor shall submit to the Architect/Engineer, all required closeout documents.

B. Contractor shall submit a marked-up set of drawings indicating any changes made during construction to the Architect/Engineer.

C. Upon completion, submit to the Architect/Engineer, a Contractor's Affidavit of Payment of Debts and Claims, and Release of Liens.

D. Refer to General Conditions for additional requirements.

1.8 PROJECT CONDITIONS

A. Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit, by accurate field measurements before fabrication; show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of Work.

1. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabrication of products without field measurements. Coordinate construction to ensure that actual opening dimensions correspond to guaranteed dimensions. Allow for trimming and fitting.

1.9 SEQUENCING AND SCHEDULING

A. Sequence and coordinate installation of wall handrails as follows:

1. Mount handrails only on completed walls. Do not support handrails temporarily by any means not satisfying structural performance requirements.

2. Mount handrails only on gypsum board assemblies reinforced to receive anchors, and where the location of concealed anchor plates has been clearly marked for benefit of Installer.

2.0 PRODUCTS

2.1 FERROUS METALS

A. Metal Surfaces, General: For metal fabrications exposed to view upon completion of the Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials whose exposed surfaces exhibit pitting, seam marks, roller marks, rolled trade names, roughness, and, for steel sheet, variations in flatness exceeding those permitted by reference standards for stretcher-leveled sheet.

B. Steel Plates, Shapes, and Bars: ASTM A 36.

C. Uncoated Structural Steel Sheet: Product type (manufacturing method), quality, and grade, as follows:

1. Cold-Rolled Structural Steel Sheet: ASTM A 611, grade as follows:

a. Grade A, unless otherwise indicated or required by design loading.

D. Steel Pipe: ASTM A 53; finish, type, and weight class as follows:

1. Black finish, unless otherwise indicated.
2. Galvanized finish for exterior installations and where indicated.

3. Type F, standard weight (schedule 40), unless otherwise indicated, or another weight, type and grade required by structural loads.

E. Malleable Iron Castings: ASTM A 47, grade 32510.

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

G. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers, and shims as required, hot-dip galvanized per ASTM A 153.

H. Welding Rods and Bare Electrodes: Select in accordance with AWS specifications of the metal alloy to be welded.

2.2 GROUT AND ANCHORING CEMENT

A. Nonshrink Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with CE CRD - C 621. Provide grout specifically recommended by manufacturer for interior and exterior applications of type specified in this section.

B. Interior Anchoring Cement: Factory-prepackaged, nonshrink, nonstaining, hydraulic controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching and grouting compound. Use for interior applications only.

C. Erosion-Resistant Anchoring Cement: Factory-prepackaged, nonshrink, nonstaining, hydraulic controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching and grouting compound. Provide formulation that is resistant to erosion from water exposure without need for protection by a sealer or waterproof coating and is recommended for exterior use by manufacturer.

D. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include but are not limited to the following:

E. Products: Subject to compliance with requirements, provide one of the following:

1. Nonshrink Nonmetallic Grouts:

a. "Bonsal Construction Grout"; W.R. Bonsal Co.
b. "Masterflow 713"; Master Builders.
c. "Sealtight 588 Grout"; W.R. Meadows, Inc.
d. "Sonogrout"; Sonneborn Building Products Div., Rexnord Chemical Products, Inc.
e. "Stoncrete NM1"; Stonhard, Inc.

2. Interior Anchoring Cement:

   a. "Bonsal Anchor Cement"; W.R. Bonsal Co.
   b. "Por-Rok"; Minwax Construction Products Division

2.3 FASTENERS

A. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.

B. Bolts and nuts: Regular hexagon head type, ASTM A 307, Grade A.

C. Lag Bolts: Square head type, FS FF-B-561.

D. Machine Screws: Cadmium plated steel, FS FF-S-92.

E. Wood Screws: Flat head carbon steel, FS FF-S-111.

F. Plain Washers: Round, carbon steel, FS FF-W-92.

G. Drilled-In Expansion Anchors: Expansion anchors complying with FS FF-S-325, Group VIII (anchors, expansion, [nondrilling]), Type I (internally threaded tubular expansion anchor); and machine bolts complying with FS FF-B-575, Grade 5.

H. Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class, and style as required.

I. Lock Washers: Helical spring type carbon steel, FS FF-W-84.

2.4 PAINT

A. Shop Primer for Ferrous Metal: Manufacturer's or fabricator's standard, fast-curing, lead-free, universal modified alkyd primer selected for good resistance to normal atmospheric corrosion, for compatibility with finish paint systems indicated, and for capability to provide a sound foundation for field-applied topcoats despite prolonged exposure complying with performance requirements of FS TT-P-645.

2.5 CONCRETE FILL AND REINFORCING MATERIALS

A. Concrete Materials and Properties: Comply with requirements of Division 3 section "Concrete Work" for normal weight, ready-mix concrete with minimum 28-day compressive strength of 2,500 psi, 440 lb cement per cu. ft. minimum, and W/C ratio of 0.65 maximum, unless higher strengths indicated.

2.6 FABRICATION, GENERAL

A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.

B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.

C. Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in the design, fabrication and installation of installed metal assemblies to prevent buckling, opening up of joints, and overstressing of welds and fasteners. Base design calculations on actual surface temperatures of metals due to both solar heat gain and nighttime sky heat loss.

1. Temperature Change (Range): 100°F (55.5°C).

D. Shear and punch metals cleanly and accurately. Remove burrs.

E. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

F. Remove sharp or rough areas on exposed traffic surfaces.

G. Weld corners and seams continuously to comply with AWS recommendations and the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and contour of welded surface matches those adjacent.

H. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.

I. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.

J. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling

limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

K. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware, screws and similar items.

L. Fabricate joints that will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.

2.7 ROUGH HARDWARE

A. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items are specified in Division 6 sections.

B. Fabricate items to sizes, shapes and dimensions required. Furnish malleable-iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.

2.8 LOOSE BEARING AND LEVELING PLATES

A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construciton, made flat, free from warps or twists, and of required thickness and bearing area. Drill plates to receive anchor bolts and fro grouting as required. Galvanize after fabrication.

2.9 LOOSE STEEL LINTELS

A. Fabricate loose structural steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.

B. Weld adjoining members together to form a single unit where indicated.

C. Size loose lintels for equal bearing of one inch per foot of clear span but not less than 8 inches bearing at each side of openings, unless otherwise indicated.

D. Galvanize loose steel lintels located in exterior walls.

2.10 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide steel framing and supports for applications indicated or which are not a part of structural steel framework, as required to complete work.

B. Fabricate units to sizes, shapes and profiles indicated and required to receive adjacent other construction retained by framing and supports. Fabricate from structural steel shapes, plates and steel bars of welded construction using mitered joints for field connection. Cut, drill and

tap units to receive hardware, hangers and similar items.

1. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed.

    a. Except as otherwise indicated, space anchors 24 inches o.c. and provide minimum anchor units in the form of steel straps 1¼" W x ¼" x 8" long.

C. Galvanize miscellaneous framing and supports in the following locations:

1. Exterior locations.
2. Interior locations where indicated.

2.11 MISCELLANEOUS STEEL TRIM

A. Provide shapes and sizes indicated for profiles shown. Unless otherwise indicated, fabricate units from structural steel shapes, plates and steel bars with continuously welded joints and smooth exposed edges. Use concealed field splices wherever possible. Provide cutouts, fittings and anchorages as required for coordination of assembly and installation with other work.

B. Galvanize miscellaneous framing and supports in the following locations:

1. Exterior locations.
2. Interior locations where indicated.

2.12 STEEL PIPE RAILING AND HANDRAILS

A. General: Fabricate pipe railings and handrails to comply with requirements indicated for design, dimensions, details, finish and member sizes including wall thickness of pipe, post spacings and anchorage, but not less than that required to support structural loads.

B. Interconnect railing and handrail members by butt-welding or welding with internal connectors, at fabricator's option, unless otherwise indicated.

1. At tee and cross intersections, notch ends of intersecting members to fit contour of pipe to which end is joined and weld all around.

C. Form changes in direction of railing members as follows:

1. By insertion of prefabricated elbow fittings.
2. By radius bends of radius indicated.
3. By bending.
4. By an method indicated above, applicable to change of direction involved.

D. Form simple and compound curves by bending pipe in jigs to produce uniform curvature for

each repetitive configuration required; maintain cylindrical cross-section of pipe throughout entire bend without buckling, twisting, cracking or otherwise deforming exposed surfaces of pipe.

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

F. Close exposed ends of pipe by welding 3/16 inch thick steel plate in place or by use of prefabricated fittings, except where clearance of end of pipe and adjoining wall surface is ¼" or less.

G. Toe Boards: Where indicated, provide toe boards at railings around openings and at the edge of open-sided floors and platforms. Fabricate to dimensions and details indicated, or if not indicated, use 4" H x _" steel plate welded to, and centered between, each railing post.

H. Brackets, Flanges, Fittings and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings and anchors for interconnections of pipe and attachment of railings and handrails to other work. Furnish inserts and other anchorage devices for connecting railings and handrails to concrete or masonry work.

I. Fillers: Provide steel sheet or plate fillers of thickness and size indicated or required to support structural loads of handrails where needed to transfer wall bracket loads through wall finishes to structural supports. Size fillers to suit wall finish thicknesses. Size fillers to produce adequate bearing to prevent bracket rotation and overstressing of substrate.

J. For interior steel railings formed from steel pipe with black finish, provide non-galvanized ferrous metal fittings, brackets, fasteners, and sleeves, except galvanize anchors embedded in exterior masonry and concrete construction.

2.13 FINISHES, GENERAL

A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to application and designations of finishes.

B. Finish metal fabrications after assembly.

2.14 STEEL AND IRON FINISHES

A. Preparation for Shop Priming: Prepare uncoated ferrous metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:

1. Exteriors (SSPC Zone 1B): SSPC-SP6 "Commercial Blast Cleaning."
2. Interiors (SSPC Zone 1A): SSPC-SP3 "Power Tool Cleaning."

B. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized

finish or to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA1 "Paint Application Specification No. 1" for shop painting.

1. Stripe paint all edges, corners, crevices, bolts, welds and sharp edges.

3.0 EXECUTION

3.1 PREPARATION

A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions and directions for installation of anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.2 INSTALLATION, GENERAL

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.

B. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment and elevation; with edges and surfaces level, plumb, true and free of rack; and measured from established lines and levels.

C. Provide temporary bracing or anchors in formwork for items that are to be build into concrete masonry or similar construction.

D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.

E. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, methods used in correcting welding work, and the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so

that no roughness shows after finishing and contour of welded surface matches those adjacent.

F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood or dissimilar metals with a heavy coat of bituminous paint or zinc chromate primer.

3.3 SETTING LOOSE PLATES

A. Clean concrete and masonry bearing surfaces of any bond-reducing materials and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.

B. Set loose leveling and bearing plates on wedges or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout.

1. Use metallic nonshrink grout in concealed locations where not exposed to moisture; use nonmetallic nonshrink grout in exposed locations, unless otherwise indicated.

2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.4 INSTALLATION OF STEEL PIPE RAILINGS AND HANDRAILS

A. Adjust railings prior to anchoring to ensure matching alignment at abutting joints. Space posts at spacing indicated, or if not indicated, as required by design loadings. Plumb posts in each direction. Secure posts and railing ends to building construction as follows:

1. Anchor posts in concrete by means of pipe sleeves preset and anchored into concrete. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with the following anchoring material, mixed and placed to comply with anchoring material manufacturer's directions.

2. Anchor posts in concrete by core drilling holes not less than 5 inches deep and ¾" greater than outside diameter of post. Clean holes of all loose material, insert posts and fill annular space between post and concrete with the following anchoring material, mixed and placed to comply with anchoring material manufacturer's directions.
   a. Nonshrink, nonmetallic grout.
   b. Nonshrink, nonmetallic grout or anchoring cement.
   c. Cover anchorage joint with a round steel flange attached to post as follows:
      1. Welded to post after placement of anchoring material.
      2. By set screws.
   d. Leave anchorage joint exposed, wipe off surplus anchoring material, and

leave _" build-up, sloped away from post. For installations exposed on exterior, or to flow of water, seal anchoring material to comply with grout manufacturer's directions.

3. Anchor posts to steel with steel oval flanges, angle type or floor type as required by conditions, welded to posts and bolted to steel supporting members.

4. Anchor rail ends into concrete and masonry with steel round flanges welded to rail ends and anchored into wall construction with lead expansion shields and bolts.

5. Anchor rail ends to steel with steel oval or round flanges welded to rail ends and bolted to structural steel members, unless otherwise indicated.

B. Secure handrails to wall with wall brackets and end fittings. Provide bracket with not less and 1½" clearance from inside face of handrail and finished wall surface. Locate brackets as indicated, or if not indicated, at spacing required to support structural loads. Secure wall brackets and wall return fittings to building construction as follows:

1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.

2. For concrete and solid masonry anchorage, use drilled-in expansion shield and either concealed hanger bolt or exposed lag bolt, as applicable.

3. For hollow masonry anchorage, use toggle bolts having square heads.

4. For steel framed gypsum board assemblies, fasten brackets directly to steel framing or concealed anchors using self-tapping screws of size and type required to support structural loads.

3.5 ADJUSTING AND CLEANING

A. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections and abraded areas of shop paint and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 requirements for touch-up of field painted surfaces.

1. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.

B. Touch-Up Painting: Cleaning and touch-up painting of field welds, bolted connections and abraded areas of the shop paint on miscellaneous metal is specified in Division 9 Section "Painting" of these specifications.

END OF SECTION

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to this section.

1.2 SUMMARY:

A. Types of work in this section include rough carpentry:

1. Preservative treated wood blocking/nailers for roofing.
2. Wood grounds, nailers and blocking.

1.3 SUBMITTALS:

A. Wood Treatment Data: Submit chemical treatment manufacturer's instructions for handling, storing, installation and finishing of treated material.

1. Preservative treatment: For each type specified, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained and conformance with applicable standards.

1.4 PRODUCT HANDLING:

A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber as well as plywood and other panels; provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.

1. For lumber and plywood pressure treated with waterborne chemicals, sticker between each course to provide air circulation.

1.5 PROJECT CONDITIONS:

A. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow attachment of other work.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL:

A. Lumber Standards: Manufacture lumber to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.

B. Inspection Agencies: Inspection agencies and the abbreviations used to reference with lumber grades and species include the following:

1. NLGA - National Lumber Grades Authority (Canadian).
2. SPIB - Southern Pine Inspection Bureau.
3. WCLIB - West Coast Lumber Inspection Bureau.
4. WWPA - Western Wood Products Association.

C. Grade Stamps: Factory-mark each piece of lumber with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.

D. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.

1. Provide dressed lumber, S4S, unless otherwise indicated.

2. Provide seasoned lumber with 19 percent maximum moisture content at time of dressing and shipment for sizes 2 inches or less in nominal thickness, unless otherwise indicated.

3. Provide lumber with 15 percent maximum moisture content at time of dressing and shipment for sizes 2 inches or less in nominal thickness, unless otherwise indicated.

2.2 DIMENSION LUMBER:

A. Light lumber framing, wood blocking and grounds, including wood blocking for wall attached shelving, cabinets, and toilet accessories:

1. Dimensions:

a. Where indicated and/or specified, lumber dimensions are nominal.
b. Actual dimensions to conform to PS20 for structural framing.

2. Surfacing: Surface four sides (S4S) unless specified otherwise.

3. Grades shall conform to the grading rules of manufacturer's association for the kinds of wood. Lumber shall bear the grade and trademark of the association under whose rule it is produced and shipped and a mark of the mill identification.

4. Species: Douglas fir-larch, hem-fir or southern pine graded under SPIB, WCLIB or WWPA Rules.

5. Grade: SPF No. 2 or better.

6. Moisture content: 19% or less.

7. Sizes: As indicated on drawings and/or as required to suit conditions encountered.

B. Shoring Lumber: Dimensions, species and adequate stress characteristics as required to suit conditions encountered.

2.3 WOOD TREATMENT BY PRESSURE PROCESS:

A. Preservative Treatment: Where lumber or plywood is indicated as "Trt-Wd" or "Treated", or “PT” is specified herein to be treated, comply with applicable requirements of AWPA Standards C2 (Lumber) and C9 (Plywood) and of AWPB Standards listed below. Mark each treated item with the AWPB Quality Mark Requirements.

1. Pressure-treat aboveground items with water-borne preservatives to comply with AWPB LP-2. After treatment, kiln-dry lumber and plywood to a maximum moisture content, respectively, of 19 percent and 15 percent. Treat indicated items and the following:

a. Wood nailers, curbs, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers and waterproofing.

b. Blocking, furring, stripping and similar concealed members in contact with masonry or concrete.

2. Treat coated cut surfaces with heavy brush coat of same chemical used for treatment and to comply with AWPA M4.

2.5 MISCELLANEOUS MATERIALS:

A. Fasteners and Anchorages: Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.

1. Where rough carpentry work is exposed to weather, used with preservative treated wood, or in area of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating (ASTM A-153).

2.6 FIRE RETARDANT LUMBER

A. Provide fire retardant lumber as required by the applicable authorities where called for on the drawings and as required by Code.

PART 3 - EXECUTION

3.1 INSPECTION:

A. Verify that surfaces to receive rough carpentry materials are prepared to required grades and dimensions and that they are reasonably clean, smooth, level and/or plumb.

B. Assure that anchor bolts required to secure blocking and nailers are properly located and installed.

C. Assure that preservative treatment used on blocking and nailers is compatible with roof deck insulation and membrane roofing materials.

3.2 INSTALLATION, GENERAL:

A. Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.

B. Set carpentry work to required levels and lines, with members plumb and true and cut and fitted.

C. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards.

3.3 INSTALLATION:

A. Wood Blocking and Nailers: Used in conjunction with roof deck insulation, membrane roofing, fascia, copings and flashings:

1. Coordinate wood blocking and nailer requirements with appropriate applicators and approved shop drawings.

2. In general, install preservative treated wood nailers at perimeter of each roof level, curb flashing, roof hatch, similar penetrations and as required for fascia, copings, and at other locations as indicated on drawings and/or as required.

3. Firmly anchor all roof nailers to meet FM Loss Prevention Data Bulletin 1-49.

4. Unless otherwise indicated, thickness of nailers used in conjunction with roofing membrane shall be such that top of nailer is flush with surface to which roofing membrane is applied and/or attached (top of roof deck insulation) at horizontal plane.

5. Coordinate installation of vertical nailers, where required, with work of roofing material applicator.

6. Provide and install solid blocking at all wall door bumper locations.

B. Properly frame, closely fit, accurately set all framing, blocking, grounds, nailers, furring and other rough woodwork to required lines and levels and rigidly secure in place.

C. Install all woodwork level, plumb, square and true to details.

D. Expansion Joints: Worked to permit section to expand or contract without buckling.

E. Furnish and set all grounds, bucks and nailing clips required throughout building, including blocking required in Division 9, for attachment of all finished carpentry and millwork or for work of other trades requiring same. Provide grounds or blocking for all finished wood trim, grounds being ample to take nailing and securely anchored to studs.

F. Shoring Timber: Install all shoring and miscellaneous timber required to complete work properly.

3.4 Patch or repair any work of this section that may be cut or damaged by other trades.

3.5 Supervise all cutting for work by others and be responsible for any damage. Furnish means for proper access to different portions of work to Architect or his representative.

3.6 Details showing intent of design and construction are indicated on drawings and should be followed as closely as possible in keeping with best construction practices of trade involved. Work shall meet with approval of Architect.

3.7 Take and verify all measurements required for proper execution and fit of work. Check Architect's dimensions against field conditions. Report to Architect any discrepancies which will involve corrections. Adjust before fabrication. Be responsible for proper connections to adjoining work.

END OF SECTION

SECTION 06200 - FINISH CARPENTRY AND MILLWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.2 SUMMARY:

A. Extent of finish carpentry and millwork is indicated on drawings and provisions of this section.

B. Work Shall Include, But Not Be Limited To:

1. Plastic laminate tops, aprons, panels, shelves, except as otherwise specified in casework sections.

a. Cut openings in countertops for sinks where indicated on drawings from templates furnished by P.C.

2. Solid Surface countertops.

3. Solid Surface Backsplash.

4. Wood trim.

5. Finish carpentry and millwork to carry out intent of drawings and specifications.

6. Screws, fasteners and anchors required for fabrication and installation.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

A. Carpentry is specified in another Division 6 section.
B. Painting as specified in Division 9.
C. Mechanical as specified in Division 15.
D. Plumbing as specified in Division 15

1.4 QUALITY ASSURANCE:

A. Job Conditions: Prior to delivery and installation of finish carpentry and millwork materials, assure that following conditions exist -

1. Temperature and humidity conditions closely approximate those which will exist when building is occupied.

2. Building is not damp and cold or dry and hot.

3. Concrete flooring, plastering and other wet work has been allowed to dry properly.

4. Windows and doors are in place and glazed.

5. Heating system is installed and operating where necessary to maintain proper conditions before, during and after finish carpentry and millwork is in progress.

B. Fabricate materials to conform with details and design indicated on drawings in accordance with best millwork practices. Work must meet approval of Architect. Remove and build over, any mediocre work disapproved by Architect.

C. Coordination:

1. Take and verify all measurements required for proper execution and fit of work.

2. Verify dimensions on Architect's drawings with field conditions.

3. Report discrepancies and conflicts involving changes, including those between different installations, to Architect for correction prior to fabrication of materials.

4. Coordinate work with various other trades providing adjoining work.

1.5 SUBMITTALS:

A. Shop Drawings: Submit shop drawings of millwork, indicating:

1. Elevations and sections.
2. Details of joinery and fastening.
3. Material species and grade.
4. Surfaces to receive plastic laminate finish and solid surface finish.
5. Adhesives types and grades.
6. Actual field verified dimensions.

B. Samples:

1. Two pieces of each species of solid wood adequate to indicate standard of quality for materials to be used on project.

2. Samples of specified plastic laminate for Architect's approval.

3. Samples of specified solid surface for Architect’s approval.

1.6 PRODUCT DELIVERY, HANDLING AND STORAGE:

A. Provide necessary protection for delivery, handling, and storage of materials to prevent damage.

B. Store materials in an enclosed space protected from weather and with environmental conditions specified for job conditions.

C. Provide manufacturer’s 10-year warranty against defects in materials. Warranty shall provide material and labor to repair or replace defective materials. Damage caused by physical or chemical abuse or damage from excessive heat not warranted.

PART 2 - PRODUCTS

2.1 MATERIALS:

A. Solid Woods: Hardwood, clear and free from defects. Kiln dry to insure moisture content of 6 to 8 %. After kiln drying, temper all solid woods to moisture content of 7 to 10 %.

1. Hardwood for exposed edges of plywood:

a. Birch (See drawings to verify species and locations)

2. Hardwood:

a. Birch: Grade No. 2 or better, for natural finish.

3. Wood moldings, trim and solid wood for natural finish: Birch

4. Finish stain to be selected by Architect

B. Plastic Laminate:

1. Conform to National Electric Manufacturer's Association (NEMA) LD3-1995, GP50, standard grade, minimum 0.050 inch thick, textured finish. Color as selected.

2. Backing sheet: LD3-1995, BK20, 0.020 inch thick.

3. Plastic Laminate Core:

a. Particleboard: 47 pound density, conforming to ANSI A208-1, Grade 1-M-3 "Mat Formed Wood Particleboard".

(1) Vertical applications: Minimum 1/2 inch thick.
(2) Horizontal applications: Minimum 3/4 inch thick.

C. Solid Surface:

1. Conform to all manufacturers recommended installation requirements.

2. Characteristics:
a. Cast, filled, acrylic; not coated, laminated or of composite construction, meeting ANSE Z124-1980, Type Six, and Fed. Spec. WW-P-541E/GEN dated August 1, 1980.

1. Superficial damage to a depth of 0.10" shall be repairable by sanding or polishing.

b. Thickness: Provide materials of thickness as shown on the drawings.

c. Edge: As indicated on drawings.

D. Adhesives:

1. Millwork: As recommended by millwork fabricator for conditions encountered.

2. Plastic laminate: Natural-setting hybrid P.V.A. Type III water resistant adhesives that cure through chemical reaction, containing no health or environmentally hazardous ingredients.

3. Solid Surface:

   A. Joint Adhesive: Manufacturer's standard two part adhesive kit to create inconspicuous, non-porous joints.

E. Screws and Fastenings:

1. Stainless Steel for Plastic Laminate.
2. Millwork Assembly: Rustproof type as required for conditions encountered.

F. Backsplash:

1. Applied per manufacturer's recommended installation instructions.

2.2 WARRANTY:

A. Provide manufacturer's 10-year warranty against defects in materials. Warranty shall provide material and labor to repair or replace defective materials. Damage caused by physical or chemical abuse or damage from excessive heat not warranted.

2.3 CASEWORK

A. Countertops with high pressure laminate finish.
   1. Construction: See Details.
   2. Exposed surfaces (Acceptable Manufacturers)
      a. Formica Corporation
      b. Wilsonart
      c. Pionite
      d. Nevamar
      e. Laminart
   3. Colors and patterns: As selected from any decorator colors or finishes.
   4. Backing sheet: Clear.
   5. Thickness: Horizontal surfaces 1/l6" vertical surfaces l/32"
   6. Adhesive: Contact type as recommended by the laminated plastic manufacturer.
   7. Semi-exposed surfaces: As required by AWI quality grade.

B. Particleboard Core:
   1. Medium density conforming to CS236, type 1-B2.
   2. Particleboard shall not be used for shelves.

C. Solid Surface Counters:

   1. Provide sizes and configuration as shown on drawings and specified.
   2. Provide all necessary blocking and brackets for support.
   3. Solid Polymer surface shall be applied to ¾" particleboard in strict accordance with manufacturer's instructions and recommendations.
   4. Exposed surfaces (acceptable manufacturers)

      a. Manufacturer: Cambria
      b. Color: Williston

2.4 MILLWORK

Shall include the following:

A. Vanity Counters:

1. Provide sizes and configuration as shown on drawings and specified herein (field measure and scribe to walls). All counters to receive corian finish as per drawing details.
2. Provide all hardware required. Hardware for millwork is not included in hardware Section 8.
3. Provide all necessary blocking and brackets for support and attachment to walls.
4. Solid Polymer surface shall be applied to 3/4" particle board in strict accordance with manufacturer's instructions and recommendation.

B. Coat Rod & Shelf, and all other millwork specified in drawings to receive plastic laminate:

1. Provide sizes and configuration as shown on drawings and specified herein (field measure and scribe to walls). All counters to receive plastic laminate finish as per drawing details.
2. Provide all hardware required. Hardware for millwork is not included in hardware Section 8.
3. Provide all necessary blocking and brackets for support and attachment to walls.
4. Plastic laminate shall be applied to 3/4" particle board in strict accordance with laminate manufacturers instructions and recommendation.

2.5 FABRICATION, GENERAL:

A. Fabrications to dimensions, profiles, and details indicated on drawings, with openings and mortises precut, where required, to receive hardware and other items and work.

B. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

C. Pre-cut Openings: Fabricate with pre-cut openings, where required, to receive hardware, appliances, plumbing fixtures, electrical work and similar items. Locate openings accurately and use templates or roughing-in diagrams for proper size and shape. Smooth edges of cutoffs.

D. Measurements: Before proceeding with fabrication of solid polymer fabrications required to be fitted to other construction, obtain field measurements and verify dimensions and shop drawing details as required for accurate fit.

B. Millwork:

1. Assemble millwork items neatly and carefully.

2. Glue shop assembled surfaces where possible and block at concealed locations.

3. Cope intersecting moldings where possible.

4. Join mill assemblies with concealed nails and screws where practical.

5. Glue, mortise and tenon joints.

6. Install splines at mitered corners.

7. Make all jointing over solid bearing.

8. Where drawers are required, fabricate heads, sides and backs from solid hardwood material. Particleboard, not acceptable.

F. Plastic Laminate Application:

1. Apply plastic laminate over solid backing of thickness indicated on drawings and/or specified herein.

2. Use adhesive specified in accordance with manufacturer's recommendations.

3. Adhere plastic laminate to backing under pressure as recommended by laminated plastic manufacturer.

4. Apply plastic laminate to exposed faces, ends and edges of core material.

5. Where possible, apply plastic laminate without seams.

6. Apply backing sheets on rear face of core material in all cases where rear face is not exposed to view.

7. Seal all exposed core edges at cutouts with approved waterproof sealer.

8. Prepare plastic laminate tops and panels for fastening with concealed screws and anchors.

G. Solid Surface Counters and Backslpash:

1. Fabrications to dimensions, profiles, and details indicated on drawings, with openings and mortises precut, where required, to receive hardware and other items and work.

2. Complete fabrication, assembly, finishing, hardware application,, and other work before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

3. Pre-cut Openings: Fabricate with pre-cut openings, where required, to receive hardware, appliances, plumbing fixtures, electrical work and similar items Locate openings accurately and use templates or roughing-in diagrams for proper size and shape. Smooth edges of cutoffs.

4. Measurements: Before proceeding with fabrication of solid polymer fabrications required to be fitted to other construction obtain field measurements and verify dimension and shop drawing details as required for accurate fit.

5. Install applied backsplashes using manufacturer's standard color-matched silicone sealant.

6. Adhere applied backsplash to countertop using manufacturer's standard color-matched silicone sealant.

2.6 BLOCKING, GROUNDS AND FRAMING

Shall be of thickness required for intended purpose.

A. Framing: Frame, fit closely, set framing accurately to required lines, levels, secure rigidly in place. Provide special framing or construction not indicated or specified, as required to complete work in best workmanlike manner. Do nailing, and fastening in a thorough manner; use nails and fasteners of ample size: l6d spikes where practicable.

B. Provide dressed wood grounds and furring where required and herein described.

C. Set grounds rigidly, in perfect alignment, true up with long straight edge.

D. Fastening: To concrete and solid masonry with expansion bolts. Fasten to hollow masonry with toggle bolts or with nails in metal wall plugs. Fasten to metal with stove bolts and fasten to metal lath with wire. The use of wood plugs will not be permitted.

E. Install rough wood blocking, rough hardware metal fastenings for proper installation of finish work and accessories.

F. Install furring as indicated.

2.7 FINISH HARDWARE

Shall be delivered from Division 8 for installation after painting.

A. Install hardware in accordance with manufacturer's instructions. Fit accurately, apply securely and adjust carefully.

PART 3 - EXECUTION

3.1 INTERIOR FINISH:

A. General character and intent as indicated on drawings.

B. Perform all cutting and fitting neatly and, in general, make fastenings with finishing nails.

C. Set exposed nails for putty stopping.

D. Space splice joints in wood trim not less than 12 feet on center. Miter and glue splices. Where transparent finish is scheduled, match grain at splices as closely as possible.

E. Finish Work: Free from open joints and tool marks.

3.2 INSTALLATION:

A. Install work level, plumb, true to detail.

B. Fasten work securely in place.

C. Back prime all interior woodwork with one liberal coat of approved sealer.

D. Unless otherwise indicated, provide concealed fastenings and anchors to secure plastic laminated tops and panels to blocking or other materials indicated.

E. Form field joints using manufacturer's recommended adhesive, with joints inconspicuous in finished work. Keep components and hands clean when making joints.

F. Provide backsplashes and end splashes as indicated on the drawings.

G. Install sinks in countertops using manufacturers/installers recommended product installation details.

H. Keep components and hands clean during installation. Remove adhesives, sealants and other stains. Components shall be clean on date of substantial completion.

I. Clean and prepare finish carpentry and millwork to receive scheduled finish.

J. Allowable tolerances: Fabricate to the following tolerances:

1. Variation in component size: $\pm$ 1/8".
2. Location of openings: $\pm$ 1/8" form indicated location.

3. Anchors: Select material, type, size and finish required.

3.3 PROTECTION:

A. Provide protection for finish carpentry and millwork against damage by construction work until completion of project.

B. Repair or replace damaged work as directed by Architect, at no additional cost to Owner.

END OF SECTION

SECTION 07200 - INSULATION

1.0 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of insulation work is shown on drawings and indicated by provisions of this section.

B. Applications of insulation specified in this section include the following:

1. Foundation wall insulation (supporting backfill).
2. Safing insulation.
3. Blanket-type building insulation.
4. Acoustical Insulation
5. Korfil

C. Roof insulation is specified in the Division-7 section in which other roofing products, including roofing membrane is covered.

1.3 QUALITY ASSURANCE

A. Thermal Resistivity: Where thermal resistivity properties of insulation materials are designated by r-values they represent the rate of heat flow through a homogenous material exactly 1" thick, measured by test method included in referenced material standard or otherwise indicated. They are expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated.

B. Fire Performance Characteristics: Provide insulation materials which are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated below, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction.

1. Surface Burning Characteristics: ASTM E84.
2. Fire Resistance Ratings: ASTM E119.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product literature and installation instructions for each type of insulation and air infiltration material required.

B. Certified Test Reports: With product data, submit copies of certified test reports showing compliance with specified performance values, including r-values (aged values for plastic insulations), densities, compression strengths, fire performance characteristics, perm ratings, water absorption ratings and similar properties.

1.5 DELIVERY, STORAGE, AND HANDLING

A. General Protection: Protect insulations from physical damage and from becoming wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation.

1.6 CLOSEOUT SUBMITTALS

A. Upon completion of the Work of this Section, Contractor shall submit to the Construction Manager, all required closeout documents.

B. Contractor shall submit a marked-up set of drawings indicating any changes made during construction to the Construction Manager.

C. Upon completion, submit to the Construction Manager, a Contractor's Affidavit of Payment of Debts and Claims, and Release of Liens.

D. Refer to General Conditions for additional requirements.

2.0 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

1. Manufacturers of Glass Fiber Insulation:
   a. CertainTeed Corp.
   b. Manville Corp.
   c. Owens-Corning Fiberglas Corp.

2. Manufacturers of Semi-Refractory Fiber Insulation:
   a. Manville Corp.
   b. United States Gypsum Co.

3. Manufacturers for Foamed in Place Insulation
   a. Foam – Tech

b. Architect approval equal.

2.2 INSULATING MATERIALS

A. General: Provide insulating materials which comply with requirements indicated for materials, compliance with referenced standards, and other characteristics.

B. Foundation Insulation Extruded Polystyrene Board Insulation: Rigid, cellular thermal insulation with closed-cells and integral high density skin, formed by the expansion of polystyrene base resin in an extrusion process to comply with ASTM C 578 for Type indicated; with 5-year aged r-values of 5.4 and 5 at 40 and 75 deg.F (4.4 and 23.9 deg.C), respectively; and as follows:

1. Type IV, 1.6 lb./cu. ft. min. density, unless otherwise indicated.

C. Faced Mineral Fiber Blanket/Batt Insulation: Thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 Type III, Class A (blankets with reflective vapor-retarder membrane facing with flame spread of 25 or less); foil vapor-retarder membrane on one face, respectively; and as follows:

1. Mineral Fiber Type: Fibers manufactured from glass.

2. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50 respectively. R Value of R-19.

D. Fire Stop Material Semi-Refractory Fiber Board Safing Insulation: Semi-rigid boards designed for use as a fire stop at openings between edge of slab and exterior wall panels, produced by combining semi-refractory mineral fiber manufactured from slag with thermosetting resin binders to comply with ASTM C612, Class 1 and 2; nominal density of 4.0 lbs. per cu. ft.; passing ASTM E136 for combustion characteristics; r-value of 4.0 at 75 deg.F (23.9 deg.C).

E. Acoustical Insulation: Thermafiber sound attenuation blankets by USG.

F. Molded Insulation

1. Concrete Masonry Unit Insulation: Provide molded insulation at all exterior CMU. The insulation shall be molded of expandable polystyrene.

2. Typical Density Lbs/Cubic Ft.: 1.0

3. Thermal Resistance (R) @ 75º: 3.92

4. Thermal Resistance (R) @ 40º: 4.17

5. Water vapor transmission perm inches: 0.8 - 2.8

6. Water absorption % volume: <2.0

7. Flame spread rating: <5.0

3.0 EXECUTION

3.1 INSPECTION AND PREPARATION

A. Require Installer to examine substrates and conditions under which insulation work is to be performed. A satisfactory substrate is one that complies with requirements of the section in which substrate and related work is specified. Obtain Installer's written report listing conditions detrimental to performance of work in this section. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

B. Clean substrates of substances harmful to insulations or air infiltration materials, including removal of projections which might puncture air infiltration materials.

3.2 INSTALLATION, GENERAL

A. Comply with manufacturer's instructions for particular conditions of installation in each case. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with work.

B. Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections which interfere with placement.

C. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

3.3 INSTALLATION OF PERIMETER AND UNDER-SLAB INSULATION

A. On vertical surfaces, set units in adhesive applied in accordance with manufacturer's instructions. Use type of adhesive recommended by manufacturer of insulation.

B. Extend insulation as shown on the drawings. Set in adhesive in accordance with recommendations of manufacturer of insulation. Score and snap off access insulation ½" below finished concrete floor elevation.

3.4 INSTALLATION OF GENERAL BUILDING INSULATION

A. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Seal joints between closed-cell (non-breathing) insulation units by applying mastic or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with mastic or sealant.

C. At all exterior walls, set air infiltration faced units with air infiltration to warm side of construction, except as otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.

D. Stuff fiberglass insulation into miscellaneous voids and cavity spaces where shown. Compact to approximately 40% of normal maximum volume (to a density of approximately 2.5 lbs. per cu. ft.).

END OF SECTION

SECTION 07535 - FULLY ADHERED EPDM PROPRIETARY

1.0 GENERAL

The drawings, Instructions to Bidders, Form of Proposal, General Conditions, Supplementary General Conditions, and Division 1 are included herein and govern work under this section.

1.1 SCOPE

A. Furnish all labor, materials and equipment necessary and incidentals to execute the complete installation of the Fully Adhered Roofing System as indicated on the drawings and specified herein.

B. Furnish and install membrane roofing system in strict accordance with drawings, specifications, manufacturer recommendations and instructions. This specification is written around the membrane roofing system as manufactured by Firestone Building Products Company for the purpose of establishing standards of quality of materials construction and workmanship.

C. Furnish roof insulation related to Fully Adhered Roof System as specified in this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

A. Wood Nailers: Section 06100

B. Flashing and Sheet Metal: Section 07600

1.3 QUALITY ASSURANCE

A. Applicator:

1. Applicator must be licensed to install roof system by Firestone Building Products Company.

2. Applicator must have a minimum of three (3) successive years experience.

B. Store materials on clean raised platforms under weather protective coverings when store outside. Store adhesives, caulking, primers, etc. at room temperature (60-80 degrees F). If stored at lower temperature, restore to proper temperature before using.

C. Damaged materials shall be replaced at roofing contractor’s expense.

1.4 JOB CONDITIONS

A. Proceed with roofing work when existing and forecasted weather conditions permit work to be performed in accordance with manufacturer's recommendations and warranty requirements.

B. Do not allow oil based products (petroleum, grease, oil, solvents, etc.), mineral oil, animal fat or direct steam vents to come in direct contact with EPDM membrane.

C. Coordinate roofing work with other trades.

D. All surfaces to receive roofing shall be thoroughly dry and free of dew or frost.

1.5 WARRANTY

A. The contractor shall guarantee the roof for a period of two years from date of acceptance and provide a 10 year Manufacturer's Warranty against defective workmanship and manufacturers 20 year warranty against defective materials.

1. The contractor guarantees that the total roof installation together with all related composition flashing, metal flashing, roof insulation, blocking, and adhesives installed in connection with the roof, will be watertight and free of defects of material and workmanship for a period of two (2) years from final acceptance of the completed roof.

2. During this two year period, the roofing contractor agrees that within 48 hours of being notified, he will inspect and make all repairs necessary at no cost to the owner with exception of natural disaster.

B. Firestone Building Products Company shall issue a ten (10) year warranty against material workmanship and labor not limited to the dollar value of the original contract and a 20 year warranty against defective material.

1. The Firestone agrees to make all repairs necessary within 72 hours of notification.

2. Two copies of the properly executed warranty shall be delivered to the owners representative before final payment will be made.

1.6 PRE-ROOFING CONFERENCE

A. Prior to the beginning of work, a pre-roofing conference is to be held, attended by the Architect, the Roofing Contractor, a representative of Firestone and the owners representative if required. The purpose of this conference is to review the specifications, details, application, storage areas, protection and safety precautions and establish lines of communications with other subcontractors of this project.

2.0 GENERAL

A. The components of this roof system are to be products of the Firestone Building Products Company or as approved by Firestone in writing.

2.1 MEMBRANE MATERIAL

A. The membrane shall be free to streaks, particles of foreign matter, pinholes, cracks, tears and must be uniform in thickness. When unrolled in the relaxed position, the membrane must be free of wrinkles, distortions and blisters.

B. Membrane shall be Unreinforced .060 "FR" EPDM (Ethylene Propylene Diene Terpolymer)

1. Tensile Strength: 1305 psi minimum ASTM-D-412
2. Elongation: 300% minimum ASTM-D-412
3. Tear Resistance: 150 lbs/in minimum ASTM-D-624
4. Ozone Resistance: No cracks ASTM-D-1149
5. Heat Aging: Tensile minimum 1205 psi, minimum elongation 200% ASTM-D-573
6. Brittle Temperature: -49F (-45C) ASTM-D-746
7. Water Vapor Permeability Maximum Per Mil: 2.0 ASTM-E-96
8. Thickness: 0.060"

C. Flashing shall be uncured EPDM or cured EPDM.

1. Tensile Strength: 1306 psi minimum ASTM-D-412
2. Elongation: 300% minimum ASTM-D-412
3. Brittleness Temperature: -49F (-45C) ASTM-D-746
4. Tear Resistance: 150 lbs/in minimum ASTM-D-624
5. Thickness: 0.060"

D. Related Materials

1. Bonding Adhesive: Compatible with materials to which the membrane is to be bonded, furnished by Firestone.
2. Cleaner/Primer: A wash supplied by Firestone clean mica or talc on the surface of membrane and to prepare surface for splicing, bonding or tapes.
3. Splice Adhesive: Furnished by Firestone.
4. Lap Sealant: Compatible with material with which it is used and supplied by Firestone.
5. Water-Block Seal: Compatible with materials with which it is used and supplied by Firestone.
6. Molded Pipe Boots: Furnished with a stainless steel clamping ring and supplied by Firestone.
7. Pourable Sealer: Two part polybutadine/polyethylene formula compatible with material with which it is to be used and supplied by Firestone.
8. Termination Bar, Batten Strip, Reinforced Strip: Furnished by Firestone.

9. Walkway Pads: 30" x 30" x .300 thick supplied by Firestone.
10. Sponge Tubing and Compressible Filler: As recommended by Firestone.

E. Other Related Materials

1. Wood Nailers: Pressure treated for rot resistance (Womanized or Osmose K-33) #2 or better lumber. Asphaltic or creosote treated lumber is not acceptable.

2.2 INSULATION

A. Insulation shall be flat or tapered Firestone ISO 95+ Polyisocyaniurate with a black glass fiber mat facer.

1. To meet Federal Spec #HH-I-1972/2 Class 1
2. Flame Spread: 25 maximum ASTM-E-84
3. Density: Nom. 2pcf ASTM-D-1622
4. Compressive Strength: 20 psi ASTM-D-1621
5. Factory Mutual Approved for Class 1 insulated steel roof deck construction and concrete roof slab construction.
6. Underwriters Laboratory classified as a roof deck material with resistance to internal fire exposure for construction #120 and 123. UL-1256.

B. Minimum Aged R Value shall be 5.83 inch as determined in accordance with the PIMA conditioning procedure as outlined in PIMA Tech. Bulletin 101.(Minimum R value R29)

C. Provide tapered insulation where shown on roof plan.

2.3 INSULATION FASTENERS

A. Fasteners specifically designed to be used in roofing applications for the attachment of roof insulation (with metal insulation plates), batten bars, termination bars, and other accessories to steel, wood and structural concrete surfaces by Firestone (AP or HD fasteners type.)

1. Determine length as follows:
   a. Steel Deck: Penetrate deck minimum 1/2"

2. Corrosion Coating: Fluorocarbon Polymer.

B. Metal Plates: Specifically designed for insulation attachment and having a Factory Mutual approval.

2.4 VAPOR RETARDER

A. A six (6) mil poly vapor retarder shall be provided on the deck below the first layer of insulation. Seams shall be lapped a minimum of 4" and sealed with a pressure sensitive tape, a minimum of 2" wide.

3.0 GENERAL

Comply with manufacturer's recommendations, except where more stringent requirements are indicated by architect.

3.1 SUBSTRATE PREPARATION

A. Substrate shall be structurally sound, clean, smooth free of fins, sharp edges, oil, grease, water and roof cement.

3.2 EXAMINATION

A. Verify proper placement of all roof openings, pipes, curbs, sleeves ducts, vents and drains.

3.3 VAPOR RETARDER

A. Install vapor retarder directly over roof deck lapping edges a minimum of 4" and seal joints with pressure sensitive tape. Do not apply more than can be covered and sealed in one day.

3.4 INSULATION INSTALLATION

A. Extend insulation over entire area to be insulated, neatly cutting and fitting around obstructions. Install in layers no more than 2" thick. Joints shall be 1/4" or less. Cover crickets, saddles, and tapered areas with material as required for proper drainage of membrane. Install only dry insulation and only as much as can be covered the same day with membrane and completed.

1. Secure insulation to the deck with Firestone fasteners at the rate of 1 every 2 square feet of surface area or as recommended by Firestone to meet an RM I-90 wind uplift.

2. A minimum of 300 lbs pull-out is required on all decks.

3.5 ELASTOMERIC SHEET ROOFING INSULATION

A. Install membrane to Firestone's printed instructions.

1. Loosely lay EPDM membrane over roof insulation. Allow membrane to relax 30 minutes minimum.

2. After making sure the sheet is placed in its final position, fold it back onto itself so as to expose the underside.

3. Remove excess dusting agent, or other contaminants from the mating surfaces.

4. Apply bonding adhesive at about the same time to both the underside of the membrane and the substrate to which it is to be bonded to with heavy napped roller or spray equipment. Do not allow globs or puddles to form. Note coverage rate as recommended by the manufacturer.

5. Care must be taken not to apply bonding adhesive over the area that is to be later cleaned and spliced to another sheet.

6. Allow bonding adhesive to flash off until slightly tacky to the touch with a clean dry finger and does not string. Also push forward to ensure that the adhesive is ready throughout its thickness. Flash off time will vary depending on ambient air conditions.

7. Starting at the fold, roll the previously coated portion of the sheet into the coated substrate slowly and evenly to minimize wrinkles.

8. To insure proper contact, compress the bonded membrane to the substrate with a stiff push broom.

9. Repeat procedure on second half of sheet.

B. Membrane Splicing

1. Position membrane to overlap a minimum of 3" along the entire length of the splice.

2. Clean and dry mating surfaces using clean cotton cloths with splice cleaner or splice primer to remove all contaminants that will affect the finished seam strength. Allow to dry. Additional cleaning may be required. Discard cotton cloth as it becomes dirty and replace with clean one to assure proper cleaning.

3. Thoroughly stir splice adhesive before and during use. Apply splice adhesive using a 3" or 4" wide by 1/2" thick solvent resistant paint brush in a thick, even, smooth coat with long painting type strokes, yielding a smooth glossy adhesive surface. Apply splice adhesive to both mating surfaces at about the same time to allow approximately the same drying time. (**DO NOT USE CIRCULAR MOTIONS WITH BRUSH OR ROLLERS TO APPLY SPLICE ADHESIVE.**)

4. Apply splice adhesive at specified coverage rate as recommended by the manufacturer.

5. Allow adhesive to flash off. Touch with clean dry finger to be certain that the adhesive does not stick or string. Roll top sheet into the bottom allowing to fall freely as not to stretch or wrinkle the membrane.

6. Apply hand pressure along the entire lap. Then using a steel 2" or 3" wide steel roller, roll the entire splice applying pressure toward the outside edge of the lap.

7. Wait a minimum of 4 hours before applying lap sealant, weather permitting. Clean lap edge and apply a continuous bead of lap sealant approximately 3/8" x 1/4" centered over the lap edge. Feather lap sealant immediately using special lap sealant tool.

3.6 MEMBRANE SECUREMENT

A. Provide membrane securement (base tie-in) where the membrane ends or goes through an angle change greater than 2" in 12" (i.e. roof edge, curbs, walls). Round pipes 18" or smaller in diameter and square penetrations less than 4" do not require a base tie-in, but must be flashed to Firestone's details and specifications.

B. Install Firestone metal batter strip, polymer batten strip or reinforced perimeter fastening strips as required using standard printed manufacturer's details.

3.7 GRAVEL STOPS

A. Metal flange of gravel stop shall be secured to wood blocking at perimeter making sure that metal flange is completely supported by wood. Clean metal using Firestone Splice Primer #SP-1924. Apply QuickSeam Flashing PS-4020 per Firestone's specifications and standard details.

B. Special considerations must be given to copper edging. Copper may be weathered or lacquer coating and require special cleaning with acetone or lacquer thinner.

3.8 FLASHING - CURBS, WALLS, ETC.

A. Using longest pieces practical flash all walls, curbs, etc. to the height specified by project designer.

B. The following substrates require an overlayment of 5/8" exterior grade plywood.

1. Gypsum board
2. Stucco
3. Textured masonry

4. Corrugated metal panels
5. Other uneven substrates

C. Install all flashing to current Firestone specifications and details.

3.9 PENETRATIONS

A. Pipes: Flash using pre-molded EPDM pipe flashing where practical.

B. Roof Drains: (For cast iron drains only. Contact Firestone Technical Deparmtnet for all other types.) Remove existing flashing, lead and roofing from existing drain bowl. Taper insulation around drain to 4" in 12" or less to provide a smooth transition. Position membrane over drain and cut hole allowing 1/2" minimum inside clamping ring. Cut round holes for clamping bolts. (Do not cut membrane back to bolts.) Place water block seal on the clamping ring seat below membrane using a minimum of 1/2 tube per drain. Install roof drain clamping ring and bolts. Tighten clamping ring bolts to achieve constant compression.

C. Pipe Clusters: Fabricate metal penetration pocket with a minimum of 1" clearance on all sides. Secure penetration pocket to deck as required. Fill with Pourable Sealer to shed water. A 2" minimum depth is required.

D. Hot Pipes: Protect rubber components from direct contact with steam or heat sources when in-service temperature exceed 180 degrees F.

E. Flexible Penetrations: Provide a weathertight gooseneck set in water block seal and secured to the deck. Flash in accordance with "Pipes" as listed above 3.9A).

F. Expansion Joints: Flash as detailed and in accordance with manufacturer's specifications.

END OF SECTION

SECTION 07600 - FLASHING AND SHEET METAL

1.0 GENERAL

The drawings, Instructions to Bidders, Form of Proposal, General Conditions, Supplementary General Conditions, and Division 1 are included herein and govern work under this section.

1.1 SCOPE

A. Provide labor and materials and everything necessary for, and incidental to the execution and completion of the Flashing and Sheet Metal work indicated on the drawings and specified herein.

B. The following items are specifically included without limiting the generality implied by these specifications and the drawings:

1. Flashing for mechanical pipes and fixtures
2. Metal sump pans at roof drains
3. Coping System
4. Metal Cap Flashing
5. Reglet and Counterflashing

1.2 COOPERATION

Examine drawings and specifications to determine nature of construction. Provide items in advance of use that are to be built into work by other trades, or may interfere with the normal installation or quality of their work.

2.O PRODUCTS

2.1 MATERIALS

A. Cap Flashing - Aluminum pre-finished sheet or strip of Alloy and temper recommended by the aluminum producer for the use intended. Thickness shall be 24 gauge. Finish shall be Kynar, color as selected by Architect. Cap flashing shall be shaped to profiles shown on drawings; workmanship shall follow SMACNA standards. Field work shall provide sharp clean profiles and properly fitted joints to exclude weather.

B. Coping System

Furnish and install snap-lok coping system as manufactured by MM Systems. Coping shall be .063 aluminum with smooth finish. Gutter/splice plate shall be aluminum finished to match coping. Anchor plate shall be galvanized steel. Finish shall be custom Kynar,as selected by Architect.

C. Reglet & Counterflashing

Furnish and install SNAP-TITE reglet and counterflashing system by MM Systems Corporation (RC-3).

3.0 EXECUTION

3.1 INSTALLATION

A. Flashing shall be installed where shown on drawings. Provide cements as recommended by the manufacturer and install with laps and cemented joints as recommended by the manufacturer.

3.2 VERIFICATION OF ROOF GUARANTY

A. The General Contractor shall verify and coordinate with the Cap Flashing Contractor and Roofing Contractor compatibility, acceptance and written roof guaranty.

END OF SECTION

SECTION 07900 - CAULKING AND SEALANTS

1.0 GENERAL

The drawings, Instructions to Bidders, Form of Proposal, General Conditions, Supplementary General Conditions and Division 1 are included herein and govern work under this section.

1.1 DESCRIPTION OF WORK

A. The work covered by this section of the specifications consists of providing all equipment, materials and labor, and performing all the work as required for the complete execution of caulking and sealing as indicated. Included, but not necessarily limited to, are the following:

1 Sealing all joints between precast concrete panels and aluminum and hollow metal frames and other items built into wall.
2. Sealing all joints between masonry and steel and aluminum frames.
3 Sealing all around all exterior door frames, louvers and other items built into exterior walls.
4 Sealing all joints between exterior architectural metal work and other materials.
5. Caulking all exterior door saddles.
6. Caulking all joints between flashing and other work beneath flashings.
7. Sealing at control and expansion joints.
8. Sealing or caulking at all other locations where sealant or caulking is indicated.

B. The following work is specified under other divisions and/or sections of the specifications:

1. Premolded expansion joint filler at concrete slabs - Division 3.
2. Glass and Glazing - Division 8.
3. Joint filler and sealer for sidewalks - Division 2.

1.2 GENERAL PERFORMANCE

Except as otherwise indicated, joint sealers are required to establish and maintain airtight and waterproof continuous seals on a permanent basis, within recognized limitations of wear and aging as indicated for each application. Failures of installed sealers to comply with this requirement will be recognized as failures of materials and workmanship.

1.3 SUBMITTALS

A. Product Data

Submit manufacturer's product specifications, handling, installation, curing instructions, and performance tested data sheets for each elastomeric product required.

B. Certified Tests

With product data submit test reports for elastomeric sealants on aged performances as specified, including hardness, stain resistance, adhesion, cohesion or tensile strength, elongation, low-temperature flexibility, compression set, modulus of elasticity, water absorption, and resistance (aging, weight loss, deterioration) to heat and exposures to ozone and ultraviolet.

1.4 JOB CONDITIONS

A. Weather Conditions

Do not proceed with installation of liquid sealants under unfavorable weather conditions. Install elastomeric sealants when temperature is in lower third of temperature range recommended by manufacturer for installation.

1.5 SAMPLES

A. Submit in duplicate, samples of all material specified herein, for approval of Architect.

B. Approved samples shall be the standard for comparison of all installed work.

2.0 PRODUCTS

2.1 PLAIN CAULKING COMPOUND

A. Use plain caulking compound under door saddles, at metal flashing and for interior caulking.

B. Plain caulking compound shall be the best grade manufactured by one of the following companies and shall comply with specification requirements:

1. A.C. Horn Company
2. Tremco Manufacturing Company
3. Pecora, Inc.
4. Minwax Company, Inc.
5. Martin Marietta Company
6. DAP, Inc.

C. It shall be furnished in proper consistency for gun or knife application as required.

D. Color shall be approved by the Architect.

2.2 ELASTOMER SEALANT COMPOUND

A. Except as otherwise specified, all sealant and caulking work shall be done with elastomer sealant compound.

B. All elastomer sealing compound shall be a 2-part polyurethane liquid polymer base. Primer shall be used in accordance with manufacturer's recommendations.

C. It shall have a Shore Hardness Durometer reading of 25 to 35 as recommended by manufacturer for specific conditions and shall withstand temperature extremes from minus degrees F. to plus 260 degrees F.

D. It shall absorb movement not to exceed 100% of its applied width after ten (10) years exposure without loss of adhesion or cohesion.

E. It must be non-staining and non-blushing after contact with masonry terra cotta, mortar or metal of any kind.

F. Color shall be selected by the Architect.

G. All polyurethane compound furnished under this section shall be of the same brand unless otherwise approved by the Architect in writing.

H. Elastomeric sealant shall be of a brand and as manufactured by a firm listed below:

1. Dynatrol II as manufactured by Pecora, Inc.
2. Sonolastic as manufactured by Sonneborn Building Products Division of Contech, Inc.
3. Dymeric as manufactured by the Tremco Manufacturing Company.

2.3 JOINT BACKUP

A. Joint backup material shall be compatible with sealant used.

B. Size of backup material shall be determined by the condition and as recommended by the manufacturer.

C. One of the following brands and manufacturers shall be used providing they are compatible with sealant used:

1. Aerocor PL-336 fiberglass as manufactured by Owens Corning Fiberglass Corp.
2. Ethafoam as manufactured by Dow Corning Corp.
3. Foam Polyethylene as manufactured by the Tremco Manufacturing Co.
4. Sonofoam Backer Rod as manufactured by Sonneborn, Inc.

3.0 EXECUTION

3.1 INSPECTION

Installer must examine substrates, (joint surfaces) and conditions under which joint sealer work is to be performed, and must notify Contractor in writing of unsatisfactory conditions. Do not proceed with joint sealer work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.2 JOINT PREPARATION

A. Clean joint surfaces immediately before installation of gaskets, sealants or caulking compounds. Remove dirt, insecure coatings, moisture and other substrate which could interfere with seal of gasket or bond of sealant or caulking compound. Etch concrete and masonry joint surfaces as recommended by sealant manufacturer. Roughen vitreous and glazed joint surfaces as recommended by sealant manufacturer.

B. Prime or seal joint surfaces where recommended by sealant manufacturer. Confine primer/sealer to areas of sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION

A. Comply with manufacturer's printed instructions except where more stringent requirements are shown or specified, and except where manufacturer's technical representative directs otherwise.

B. Rake out, clean out thoroughly all joints and recesses to be caulked or sealed so as to be free of all loose or foreign material, just prior to sealing.

C. Remove all foreign matter including methacrylate lacquer that would prohibit bond adhering to metal with a solvent recommended by manufacturer of compound.

D. Pack all joints deeper than 3/8" with joint filler to 3/8" from face of as detailed on drawings.

E. Apply manufacturer's recommended primer to concrete, masonry and stone surfaces before sealing if recommended by manufacturer.

F. Apply compound only to dry surfaces, preferably only when temperature is above 40 degrees F.

G. Fill all joints and recesses completely. Finish all compounds against stop where this is provided. Elsewhere finish to a neat uniform bevel. Finish all joints with beading tool.

H. Consistency of compound shall be such as to prevent sagging.

I. Use all possible precautions to avoid smearing any compound of finished work.

J. Remove immediately all compound smeared on any adjacent surfaces, using a non-staining solvent recommended by manufacturer of compound.

3.4 CURE AND PROTECTION

A. Cure sealants and caulking compounds in compliance with manufacturer's instructions and recommendations, to obtain high early bond strength, internal cohesive strength and surface durability. Advise Contractor of procedures required for cure and protection of joint sealers during construction period, so that they will be without deterioration or damage (other than normal wear and weathering) at time of substantial completion.

B. All existing work shall be adequately protected from damage and staining during all caulking and sealing operations.

END OF SECTION

SECTION 08360 - SECTIONAL STEEL OVERHEAD DOORS

- GENERAL

1.1 SECTION INCLUDES

A. Insulated Steel Doors

B. Track and Framing

1.2 RELATED SECTIONS

A. Section 04810 - Unit Masonry Assemblies: Prepared opening in masonry.

B. Section 05500 – Metal Fabrications: - Steel framed door openings.

C. Section 06100 – Rough Carpentry: Wood framing and blocking for door opening.

D. Section 07900 - Joint Sealers: Perimeter sealant and backup materials.

E. Section 08710 - Door Hardware: Cylinder locks.

1.3 REFERENCES

A. ASTM A 653/A 653M – Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

B. ASTM B 209/209M – Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

C. ASTM B 221/221M – Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.

D. ANSI/DASMA 102-1996.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

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

C. Shop Drawings: Include opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

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

E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.5 WIND PERFORMANCE REQUIREMENTS

A. Design doors to withstand positive and negative wind loads as calculated in accordance with applicable governing building codes.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of doors specified in this section with minimum five years documented experience.

B. Installer Qualifications: Installation to be by qualified dealer in accordance with the manufacturer’s installation instructions.

1.7 DELIVERY, STORAGE, AND HANDLING

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

1.8 PROJECT CONDITIONS

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

1.9 WARRANTY
A. Paint finish: 10-year warranty against rust through from cracking, checking or peeling of the paint finish.
B. Delamination: 10-year warranty against delamination.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Basis of design: Amarr Entrematic; 165 Carriage Court, Winston-Salem, NC 27105. ASD. Tel: (800) 503-3667. Fax: (336) 251-1851. Email: marketing@amarr.com Website: www.amarr.com

B. Substitutions: Approved Equals by Architect.
C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 OVERHEAD DOORS - GENERAL

A. Provide each door with door sections, brackets, tracks, counterbalance mechanisms and hardware to suit the opening and headroom available.

B. Hardware:
1. Minimum of 14 gauge galvanized steel hinges and 13 gauge galvanized steel track brackets.
2. Rollers have 10 ball bearings with casehardened inner and outer races.
3. Sliding end stile locking device provided with spring-loaded bolt for inside operation only.

4. Doors 16 feet 4 inches (5102 mm) and wider provided with double end hinges and stiles and long stem rollers.

C. Tracks: 3 inches (76 mm) as required.
1. Vertical track 17 or 19-gauge minimum galvanized steel, inclined using adjustable brackets to assure weather tight closure at the jambs.
2. Horizontal tracks 16-gauge minimum galvanized steel, reinforced with 13 gauge galvanized steel angles as required by door size and weight.
3. Provide vertical lift tracks as required.
4. Provide high lift tracks as required.

D. Spring Counterbalance: Torsion springs for door counter-balance mounted on a continuous cross header shaft. Springs to be oil tempered, helical wound and custom computed for each door. Cable drums to be die cast aluminum. Galvanized lift cable to provide minimum safety factor of five to one. Springs to comply with ANSI/DASMA 102-2011 as follows:

1. High Cycle Spring: 100,000 cycles.

E. Handle: Galvanized steel step plate/lift handle provided on inside and outside of bottom section.
1. No locking on motor operated doors.

F. Lock: No locking on motor operated doors.

G. Weather stripping: Full length EPDM rubber bottom seal attached to bottom section.

H. Weather stripping: Perimeter seal for header and jambs.

I. Mounting: Continuous reverse angle mounting for steel jambs.

J. Mounting: Bracket mounting for wood jambs.

K. Exhaust port: Installed in bottom sections. Connecting tube from vehicles by others.

L. Provide heavy duty motor operation at all overhead doors (115 volt, single phase, 1/2HP, emergency manual chain hoist, photo eyes, surface mount 3 button control station)

2.3 INSULATED STEEL DOORS

A. Model 2700 Commercial 2 inches (51 mm) polyurethane insulated door.
1. Door Size: As indicated on the Drawings.

2. Door Sections: 2 inches (51 mm) thick, sandwich construction consisting of rolled formed, commercial quality, 27 gauge exterior and interior steel skins, stucco embossed, and ribbed for added strength. Door to have tongue and groove joint system with EPDM thermal break and weather strip between section joints. Sections to be insulated with CFC free polyurethane, foamed in place by means of a continuous process. Tested door section R-value of 19.40 is tested in accordance with ASTM C 518-04. Interior skin of each section to have one continuous reinforcing strip, 20 gauge by 3-1/4 inches (83 mm) wide at top and bottom of section to provide mounting of full hinges. End stiles to be 19 gauge standard.

3. Finish: Door exterior and interior pre-painted steel consisting of a hot dipped galvanized coating applied to the base metal, a 0.2 mil baked on prime coat and an 0.8 mil baked on polyester top coat.

a. Exterior Color: True White.

4. Thermal Windows/Insulated Glass: 24 by 12 inches (610 by 305 mm) Molded plastic frame with insulated glass. Insulated glass unit to consist of two pieces of 1/8 inch (3.2 mm) thick clear glass with a 7/8 inch (22 mm) aluminum spacer.

2.4 FABRICATION
A. Insulated Steel Doors.
1. Standard maximum width and height: Model 2700 32 feet 2 inches width (9.8m) and 24 feet 1 inch height (7.3m).
a. Galvanized struts (truss bars): Provide on all doors 12 feet 4 inches (3.8 m) and wider to prevent deflection of no more than 1/120 of the spanned width when in the open position.

PART 3 EXECUTION

3.1 EXAMINATION

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

B. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare opening to permit correct installation of door unit to perimeter air and vapor barrier seal.

INSTALLATION

Install in accordance with manufacturer's instructions. Doors to be interior face mounted on a prepared surface.

Anchor assembly to wall construction and building framing without distortion.

Securely brace door tracks suspended from structure. Secure tracks to structural members or solid backing only.

Fit and align door assembly including hardware, level and plumb, to provide smooth operation.

Install perimeter weatherstripping, Position head and jamb weatherstripping to contact door sections when closed; secure in position.

Make wiring connection between power supply and operator and between operator and controls.
CLEANING

Clean doors, frames and glass.

B. Remove labels and visible markings.

3.5 PROTECTION

A. Protect installed products until completion of project.

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

END OF SECTION

SECTION 08362 SECTIONAL ALUMINUM OVERHEAD DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Glazed Aluminum Sectional Overhead Doors

B. Electric Operators and Controls.

C. Operating Hardware, tracks, and support.

1.2 RELATED SECTIONS

A. Section 03300 - Cast-In-Place Concrete: Prepared opening in concrete. Execution requirements for placement of anchors in concrete wall construction.

B. Section 04810 - Unit Masonry Assemblies: Prepared opening in masonry. Execution requirements for placement of anchors in masonry wall construction.

C. Section 05500 - Metal Fabrications: Steel frame and supports.

D. Section 06114 - Wood Blocking and Curbing: Rough wood framing and blocking for door opening.

E. Section 07900 - Joint Sealers: Perimeter sealant and backup materials.

F. Section 08710 - Door Hardware: Cylinder locks.

G. Section 09900 - Paints and Coatings: Field painting.

H. Section 11150 – Parking Control Equipment: Remote door control.

I. Section 16130 - Raceway and Boxes: Empty conduit from control station to door operator.

J. Section 16150 - Wiring Connections: Electrical service to door operator.

1.3 REFERENCES

A. ANSI/DASMA 102 - American National Standard Specifications for Sectional Overhead Type Doors.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. Wiring Connections: Requirements for electrical characteristics.
1. 115 volts, single phase, 60 Hz. (V.I.F.)

B. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

1.5 SUBMITTALS

A. Submit under provisions of Section 01300.

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

C. Shop Drawings: Indicate plans and elevations including opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

D. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

E. Operation and Maintenance Data.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum five years documented experience.

B. Installer Qualifications: Authorized representative of the manufacturer with minimum five years documented experience.

C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

1.7 DELIVERY, STORAGE, AND HANDLING

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

B. Protect materials from exposure to moisture until ready for installation.

C. Store materials in a dry, ventilated weathertight location.

1.8 PROJECT CONDITIONS

A. Pre-Installation Conference: Convene a pre-installation conference just prior to commencement of field operations, to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.

PART 2 GENERAL

2.1 MANUFACTURERS

A. Basis of design: Overhead Door Corp., 2501 S. State Hwy. 121, Suite 200, Lewisville, TX 75067. ASD. Tel. Toll Free: (800) 275-3290. Phone: (469) 549-7100. Fax: (972) 906-1499. Web Site: www.overheaddoor.com. E-mail: sales@overheaddoor.com.

B. Substitutions: As approved by Architect.

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 GLAZED ALUMINUM SECTIONAL OVERHEAD DOORS

A. Glazed Sectional Overhead Doors: 511 Series Aluminum Doors by Overhead Door Corporation. Units shall have the following characteristics:
   1. Door Assembly: Stile and rail assembly secured with 1/4 inch (6 mm).diameter through rods.
      a. Panel Thickness: 1-3/4 inches (44 mm).
      b. Center Stile Width: 21/32 inch (17 mm).
      c. End Stile Width: 2-3/4 inches (70 mm).
      d. Intermediate Rail Pair Width: 1-3/8 inches (35 mm).
      e. Top Rail Width:
         1) 3-3/4 inches (95 mm).
      f. Bottom Rail Width:
         1) 3-3/4 inches (95 mm).
      g. Aluminum Panels: 0.050 inch (1.3 mm) thick, aluminum.
      h. Stiles and Rails: 6063 - T6 aluminum.
      i. Springs:
         1) 100,000 cycles.
      j. Glazing:
         1) 1/2 inch (12.5 mm) Tempered Insulating glass.
   2. Finish and Color:
      a. Anodized Finish: Clear anodized.
   3. Hardware: Galvanized steel hinges and fixtures. Ball bearing rollers with hardened steel races.
   4. Lock: Interior galvanized single unit.
   5. Weatherstripping:
      a. Flexible bulb-type strip at bottom section.
      b. Flexible Jamb seals.
      c. Flexible Header seal.
   6. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
   7. Manual Operation: Pull rope.
   8. Electric Motor Operation: Provide UL listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot nor more than 1 foot per second. Operator shall meet UL325/2010 requirements for continuous monitoring of safety devices.
      a. Entrapment Protection: Required for momentary contact, includes radio control operation.
         1) Photoelectric sensors monitored to meet UL 325/2010.

b. Operator Controls:
   1) Push-button operated control stations with open, close, and stop buttons.
   2) Surface mounting.
   3) Interior location.
c. Special Operation:
   1) None.

PART 3 EXECUTION

3.1 EXAMINATION

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

B. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

C. Verify electric power is available and of correct characteristics.

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

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

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

3.3 INSTALLATION

A. Install overhead doors and track in accordance with approved shop drawings and the manufacturer’s printed instructions.

B. Coordinate installation with adjacent work to ensure proper clearances and allow for maintenance.

C. Anchor assembly to wall construction and building framing without distortion or stress.

D. Securely brace door tracks suspended from structure. Secure tracks to structural members only.

E. Fit and align door assembly including hardware.

F. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.

3.4 CLEANING AND ADJUSTING

A. Adjust door assembly to smooth operation and in full contact with weatherstripping.

B. Clean doors, frames and glass.

C. Remove temporary labels and visible markings.

3.5 PROTECTION

A. Do not permit construction traffic through overhead door openings after adjustment and cleaning.

B. Protect installed products until completion of project.

C. Touch-up, damaged coatings and finishes and repair minor damage before Substantial Completion.

END OF SECTION

SECTION 08410 - ALUMINUM ENTRANCES AND STOREFRONTS

1.0 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.2 SUMMARY

A. Extent of aluminum entrances and storefronts is indicated on drawings and schedules.

B. Aluminum entrances and storefront types required for the project include:

1. Exterior entrance doors and frames.
2. Hardware for aluminum doors are specified in Division 08710 Finish Hardware.

C. Glazing: Refer to "Glass and Glazing" section of Division 8 for glazing requirements for aluminum entrances and storefronts, including doors specified to be factory-preglazed.

1.3 SYSTEM DESCRIPTION

A. Performance Requirements: Provide aluminum entrance and storefront assemblies that comply with specified performance characteristics of Trifab VG 45IT, 2 ½" sightline for storefront and #350 Series swing doors as manufactured by Kawneer (Med Style).

1.4 SUBMITTALS

A. Shop Drawings: Submit shop drawings for fabrication and installation of entrances and storefronts, including the following:

1. Elevations.
2. Detail sections of typical composite members.
3. Hardware, mounting heights.
4. Anchorages and reinforcements.
5. Expansion provisions.
6. Glazing details.

1.5 PROJECT CONDITIONS

A. Field Measurements: Check openings by field measurement before fabrication to ensure proper fitting of work; show measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay in the work. Where necessary, proceed with fabrication without field measurements, and coordinate fabrication tolerances to ensure proper fit.

1.6 CLOSEOUT SUBMITTALS

A. Upon completion of the Work in this Section, Contractor shall submit to the Construction Manager, all required closeout documents.

B. Contractor shall submit a marked-up set of drawings indicating any changes made during construction to the Construction Manager.

C. Upon completion, submit to the Construction Manager, a Contractor's Affidavit of Payments of Debts and Claims, and Release of Liens.

D. Refer to General Conditions for additional requirements.

2.0 PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

B. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

1. Amarlite/Arco Metals Co.
2. Kawneer Company, Inc.
3. Tubelite Div., Indal Inc.
4. Vista Wall

2.2 MATERIALS

A. Aluminum Members: Provide alloy and temper recommended by the manufacturer.

B. Fasteners: Provide fasteners of aluminum, nonmagnetic stainless steel, or other materials warranted by the manufacturer.

1. Reinforcement: Where fasteners screw-anchor into aluminum less than 0.125" thick, reinforce the interior with aluminum or nonmagnetic stainless steel to receive screw threads.

2. Exposed Fasteners: Except where unavoidable for application of hardware, do not use exposed fasteners.
   a. Provide Phillips flat-head machine screws for exposed fasteners.

C. Compression Weatherstripping: Provide the manufacturer's standard replaceable compressible weatherstripping gaskets of molded neoprene.

D. Glass and Glazing Materials: Glass and glazing materials shall comply with requirements of "Glass and Glazing" section of these specifications.

2.3 HARDWARE

A. Provide hardware as indicated in Division 08710.

2.4 FABRICATION

A. General: Sizes of door and frame units, and profile requirements, are indicated on drawings. Variable dimensions are indicated, with maximum and minimum dimensions required to achieve design requirements and coordination with other work.

B. Prefabrication: Before shipment to the project site, complete fabrication, assembly, finishing, hardware application, and other work to the greatest extent possible. Disassemble components only as necessary for shipment and installation.

C. Weatherstripping: For exterior doors, provide compression weatherstripping against fixed stops; at other edges, provide sliding weatherstripping retained in adjustable strip mortised into door edge.

D. Doors and frames to be fabricated of aluminum extrusions AA-6063-T5 aluminum alloy with clear anodized finish.

2.5 FINISH

A. Finish shall be clear anodized.

3.0 EXECUTION

3.1 INSTALLATION

A. Comply with manufacturer's instructions and recommendations for installation.

B. Drill and tap frames and doors and apply surface-mounted hardware items. Comply with hardware manufacturer's instructions and template requirements. Use concealed fasteners wherever possible.

C. Set sill members and other members in bed of sealant as indicated, or with joint fillers or gaskets as indicated to provide weather tight construction. Comply with requirements of Division 7 for sealants, fillers and gaskets.

3.2 ADJUSTING

A. Adjust operating hardware to function properly, for smooth operation without binding, and for weather tight closure.

3.3 CLEANING

A. Clean the completed system, inside and out, promptly after installation, exercising care to avoid damage to coatings.

3.4 PROTECTION

A. Institute protective measures required throughout the remainder of the construction period to ensure that aluminum entrances and storefronts will be without damage or deterioration, other than normal weathering, at time of acceptance.

END OF SECTION

SECTION 08710 – DOOR HARDWARE

PART I – GENERAL

1.01 SUMMARY

A. SECTION INCLUDES

1. The work in this section includes furnishing all items of finish hardware as hereinafter specified or obviously necessary for all swinging, sliding, folding and other doors. Except items, which are specifically excluded from this section of the specification or of unique hardware, specified in the same sections as the doors and frames on which they are installed.

B. RELATED DOCUMENTS

1. Related documents, drawings and general provisions of contract, including General and Supplementary Conditions and Division 1 specification sections apply to this section.

C. RELATED SECTIONS

1. 06200 – Finish Carpentry
2. 08110 – Metal Doors and Frames
3. 08210 – Wood Doors
4. 08410 – Entrances and Storefronts
5. Division 16 – Access Control

1.02 REFERENCES

A. STANDARDS

1. ANSI A156.1 – Butts and Hinges
2. ANSI A156.2 – Bored and Pre-Assembled Locks and Latches
3. ANSI A156.3 – Exit Devices
4. ANSI A156.4 – Door Controls – Door Closers
5. ANSI A156.5 – Auxiliary Locks and Associated Products
6. ANSI A156.6 – Architectural Door Trim
7. ANSI A156.7 – Template Hinge Dimensions
8. ANSI A156.8 – Door Controls – Overhead Stops and Holders
9. ANSI A156.13 – Mortise Locks and Latches
10. ANSI A156.16 – Auxiliary Hardware
11. ANSI A156.18 – Recommended Practices for Materials and Finishes
12. ANSI A156.21 – Thresholds
13. ANSI A156.22 – Door Gasketing and Edge Seal Systems
14. ANSI A156.26 – Continuous Hinges
15. ANSI A156.28 – Recommended Practices for Keying Systems
16. NFPA 80 – Fire Doors and Windows
17. UL10C – Positive Pressure Fire Tests of Door Assemblies
18. AIA A201 1997 – General Conditions of the Contract

B. CODES

1. NFPA 101 – Life Safety Code
2. IBC 2003 – International Building Code
3. ANSI A117.1 – Accessible and Usable Buildings and Facilities
4. ADA – Americans with Disabilities Act

1.03 SUBMITTALS

A. GENERAL REQUIREMENTS

1. Submit copies of finish hardware schedule in accordance with Division 1, General Requirements.

B. SCHEDULES AND PRODUCT DATA

1. Schedules to be in vertical format, listing each door opening, and organized into "hardware sets" indicating complete designations of every item required for each door opening to function as intended. Hardware schedule shall be submitted within two (2) weeks from date the purchase order is received by the finish hardware supplier. Furnish four (4) copies of revised schedules after approval for field and file use. Note any special mounting instructions or requirements with the hardware schedule. Schedules to include the following information:

    a. Location of each hardware set cross-referenced to indications on drawings, both on floor plans and in door and frame schedule.
    b. Handing and degree of swing of each door.
    c. Door and frame sizes and materials.
    d. Keying information.
    e. Type, style, function, size, and finish of each hardware item.
    f. Elevation drawings and operational descriptions for all electronic openings.
    g. Name and manufacturer of each hardware item.
    h. Fastenings and other pertinent information.
    i. Explanation of all abbreviations, symbols and codes contained in schedule
    j. Mounting locations for hardware when varies from standard.

2. Submit catalog cuts and/or product data sheets for all scheduled finish hardware.

3. Submit separate detailed keying schedule for approval indicating clearly how the owner's final instructions on keying of locks has been fulfilled.

C. SAMPLES

1. Upon request, samples of each type of hardware in finish indicated shall be submitted. Samples are to remain undamaged and in working condition through submittal and review process. Items will be returned to the supplier or incorporated into the work within limitations of keying coordination requirements.

D. TEMPLATES

1. Furnish a complete list and suitable templates, together with finish hardware schedule to contractor, for distribution to necessary trades supplying materials to be prepped for finish hardware.

E. OPERATIONS AND MAINTENANCE MANUALS

1. Upon completion of construction and building turnover, furnish two (2) complete maintenance manuals to the owner. Manuals to include the following items:

    a. Approved hardware schedule, catalog cuts and keying schedule.
    b. Hardware installation and adjustment instructions.
    c. Manufacturer's written warranty information.

1.04 QUALITY ASSURANCE

A. SUBSTITUTIONS

1. All substitution requests must be submitted before bidding and within the procedures and time frame as outlined in Division 1, General Requirements. Approval of products is at the discretion of the architect and his hardware consultant.

B. SUPPLIER QUALIFICATIONS

1. A recognized architectural door hardware supplier who has maintained an office and has been furnishing hardware in the project's vicinity for a period of at least two (2) years.

2. Hardware supplier shall have office and warehouse facilities to accommodate this project.

3. Hardware supplier shall have in his employment at lease one (1) Architectural Hardware Consultant (AHC) who is available at reasonable times during business hours for consultation about the project's hardware and requirements to the owner, architect and contractor.

4. Hardware supplier must be an authorized factory distributor of all products specified herein.

1.05 FIRE-RATED OPENINGS

1. Provide door hardware for fire-rated openings that comply with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed by Underwriter's Laboratories (UL) or Warnock Hersey (WH) for use on types and sizes of doors indicated.

2. Project requires door assemblies and components that are compliant with positive pressure and S-label requirements. Specifications must be cross-referenced and coordinated with door manufacturers to ensure that total opening engineering is compatible with UL10C Standard for Positive Pressure Fire Tests of Door Assemblies.

    a. Hardware required for fire doors shall be listed with Underwriters Laboratories for ratings specified.

    b. Certification(s) of compliance shall be made available upon request by the Authority Having Jurisdiction.

1.06 DELIVERY, STORAGE AND HANDLING

A. MARKING AND PACKAGING

1. Properly package and mark items according to the approved hardware schedule, complete with necessary screws and accessories, instructions and installation templates for spotting mortising tools. Contractor shall check deliveries against accepted list and provide receipt for them, after which he is responsible for storage and care. Any shortage or damaged good shall be made without cost to the owner.

2. Packaging of door hardware is the responsibility of the supplier. As hardware supplier receives material from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set and door numbers to match the approved hardware schedule. Two or more identical sets may be packed in same container.

B. DELIVERY

1. The supplier shall deliver all hardware to the project site; direct factory shipments are not allowed unless agreed upon beforehand. Hardware supplier shall coordinate delivery times and schedules with the contractor. Inventory door hardware jointly with representatives of hardware supplier and hardware installer/contractor until each is satisfied that count is correct.

2. No keys, other than construction master keys and/or temporary keys are to be packed in boxes with the locks.

3. At time of hardware delivery, door openings supplier in conjunction with the contractor shall check in all hardware and set up a hardware storage room.

C. STORAGE

1. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of work will not be delayed by hardware losses both before and after installation.

1.07 WARRANTY

A. All items, except as noted below, shall be warranted in writing by the manufacturer against failure due to defective materials and workmanship for a minimum period of one (1) year commencing on the date of final completion and acceptance. In the event of product failure, promptly repair or replace item with no additional cost to the owner.

1. Cylindrical locksets – Standard Duty: One (1) Year
2. Mortise locksets: Five (5) years
3. Exit Devices: Five (5) years
4. Door closers: Ten (10) years

PART II – PRODUCTS

2.01 MANUFACTURERS

A. Only manufacturers as listed below shall be accepted. Obtain each type of finish hardware (hinges, latch and locksets, exit devices, door closers, etc.) from a single manufacturer.

2.02 MATERIALS

A. SCREWS AND FASTENERS

1. All required screws shall be supplied as necessary for securing finish hardware in the appropriate manner. Thru-bolts shall be supplied for exit devices and door closers where required by code and the appropriate blocking or reinforcing is not present in the door to preclude their use.

B. HANGING DEVICES

1. HINGES

a. Hinges shall conform to ANSI A156.1 and have the number of knuckles as specified, oil-impregnated bearings as specified with NRP (non-removable pin) feature, at all exterior reverse bevel doors. Unless otherwise scheduled, supply one (1) hinge for every 30” of door height. Hinges shall be a minimum of 4 1/2” high and 4” wide; heavy weight hinges (.180) shall be supplied at all doors where specified.

1) Specified Manufacturer: McKinney
2) Approved Substitutes: Bommer, Hager, Stanley

2. CONTINUOUS GEARED HINGES

a. All hinges to be non-handed and completely reversible. Hinge line to be available in concealed flush mount with or without inset, full surface and half surface types as specified in the hardware sets. All hinges to be made of extruded 6060 T6 aluminum alloy with polyacetal thrust bearings, anodized after cutouts are made for bearings. All concealed hinges to be fire-rated for 20, 45 and 90 minutes when incorporated into proper door and frame labeled installations, without necessitating the use of fusible-link pins. All concealed hinges to be available in standard, heavy, and extra heavy duty weights; all full surface and half surface hinges in standard and heavy duty weights as specified in the hardware sets. All hinges to be factory cut for door size.

1) Specified Manufacturers: McKinney
2) Approved Manufacturers: Pemko, Select

3. PIVOTS

a. All pivots shall conform to ANSI 156.4 Grade 1 and shall have oil impregnated bronze bearing in the top pivot and a radial roller and thrust bearing in the bottom pivot. The bottom pivot shall carry the full weight of the door.

1) Specified Manufacturer: Rixson
2) Approved Substitutes: NONE

C. FLUSH BOLTS AND ACCESSORIES

1. All manual and automatic flush bolts to be furnished as specified.

    a. Specified Manufacturer: McKinney
    b. Approved Substitutes: Rockwood, Trimco

D. CYLINDERS AND KEYING

1. CYLINDERS

    a. Provide cylinders and keys protected from unauthorized manufacture and distribution by manufacturer's United States patents. The key design and tolerances shall permit the cutting of keys with standard code or duplicating machines. The requirement for a single-purpose or keyway-specific cutting or duplicating machine shall not be allowed. The key design and tolerances shall permit the use of keys and cylinders in existing key systems having similar keyways and sections.

        1) Specified Manufacturer: Sargent XC
        2) Approved Substitutes: Medeco Keymark, Yale Keymark

2. KEYING

    a. All locks and cylinders shall be construction master-keyed. All locks and cylinders to be master-keyed or grandmaster-keyed as directed by the owner. The factory shall key all locks and cylinders. Furnish the following key amounts:

        1) Two (2) change keys per lock
        2) Three (3) grand master keys
        3) Six (6) master keys per master level
        4) Fifteen (15) construction/temporary keys

    b. Master keys and all high-security or restricted keyway blanks shall be sealed in tamper-proof packaged boxes when shipped from the factory. The boxes shall be shrink wrapped and imprinted to ensure the integrity of the packaging.

3. KEY CABINET

    a. Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall expansion capacity of 150% of the number of locks required for the project.

        1) Specified Manufacturer: Telkee
        2) Approved Substitutes: Lund

E. LOCKING DEVICES

1. MORTISE LOCKSETS

    a. All locksets shall be ANSI 156.13 Series 1000, Grade 1 Certified. All functions shall be manufactured in a single sized case formed from 12 gauge steel minimum. The lockset

shall have a field-adjustable, beveled armored front, with a .125” minimum thickness and shall be reversible without opening the lock body. The lockset shall be 2 3/4” backset with a one-piece 3/4” anti-friction stainless steel latchbolt. The deadbolt shall be a full 1” throw made of stainless steel and have 2 hardened steel roller inserts. All strikes shall be non-handed with a curved lip. To insure proper alignment, all trim, shall be thru-bolted and fully interchangeable between rose and escutcheon designs.

1) Specified Manufacturer: Sargent 8200 Series
2) Approved Substitutes: Corbin Russwin ML2000 Series, Schlage L9000 Series, Yale 8800 Series

2. CYLINDRICAL LOCKSETS – STANDARD DUTY

a. All locksets shall be ANSI A156.2 Series 4000, Grade 2 Certified. Locksets shall have solid one-piece, cast levers without plastic inserts, and shall be a minimum of 4 5/8" in length. Levers shall operate independently, and shall have inside and outside lever return springs. Locks shall a minimum 1/2” throw constructed of brass or stainless steel.

1) Specified Manufacturer: Sargent 7 Line
2) Approved Substitutes: Corbin Russwin CL3900 Series, Schlage AL Series, Yale 5300LN Series

3. LOCKSET STRIKES

a. Strikes shall be non-handed and available with curved lip, full lip or ASA type strikes as required. Provide strikes with lip-length required to accommodate jamb and/or trim detail and projection.

F. EXIT DEVICES

1. CONVENTIONAL DEVICES – PUSH RAIL

a. All exit devices shall be ANSI A156.3, Grade 1 Certified and shall be listed by Underwriters Laboratories and bear the UL label for life safety in full compliance with NFPA 80 and NFPA 101. Mounting rails shall be formed from a solid single piece of stainless steel, brass or bronze no less than 0.072” thick. Push rails shall be constructed of 0.062” thick material. Painted or anodized aluminum shall not be considered heavy duty and is not acceptable. Lever trim shall be available in finishes and designs to match that of the specified locksets.

1) Specified Manufacturer: Sargent 80 Series
2) Approved Substitutes: Corbin Russwin ED4000/ED5000 Series, Yale 7100/7200 Series

G. DOOR CLOSERS

1. SURFACE MOUNTED CLOSERS – HEAVY DUTY

a. All door closers shall be ANSI 156.4, Grade 1 Certified. All closers shall have aluminum alloy bodies, forged steel arms, and separate valves for adjusting backcheck, closing and latching cycles and adjustable spring to provide up to 50% increase in spring power.

Closers shall be furnished with parallel arms mounting on all doors opening into corridors or other public spaces and shall be mounted to permit 180 degrees door swing wherever wall conditions permit. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

1) Specified Manufacturer: Norton 7500 Series
2) Approved Substitutes: Corbin Russwin DC6000, Sargent 351 Series, Yale 4400 Series

2. SURFACE MOUNTED CLOSERS – STANDARD DUTY

a. All door closers shall be ANSI 156.4, Grade 1 Certified. All closers shall have aluminum alloy bodies, forged steel arms, and separate valves for adjusting backcheck, closing and latching cycles and adjustable spring to provide up to 50% increase in spring power. Closers shall be furnished with parallel arms mounting on all doors opening into corridors or other public spaces and shall be mounted to permit 180 degrees door swing wherever wall conditions permit. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

1) Specified Manufacturer: Norton 8500 Series
2) Approved Substitutes: Corbin Russwin DC3200, Sargent 1331 Series, Yale 3500 Series

H. DOOR TRIM AND PROTECTIVE PLATES

1. Kick plates shall be .050 gauges and two (2) inches less full width of door, or as specified. Push plates, pull plates, door pulls and miscellaneous door trim shall be as shown in the hardware schedule.

a. Specified Manufacturer: McKinney
b. Approved Substitutes: Rockwood, Trimco

I. DOOR STOPS AND HOLDERS

1. WALL MOUNTED DOOR STOPS

a. Where a door is indicated on the plans to strike flush against a wall, wall bumpers shall be provided. Provide convex or concave design as indicated.

1) Specified Manufacturers: McKinney
2) Approved Substitutes: Rockwood, Trimco

2. OVERHEAD STOPS/HOLDERS

a. Where specified, overhead stops/holders as shown in the hardware sets are to be provided. Track, slide, arm and jamb bracket shall be constructed of extruded bronze and shock absorber spring shall be of heavy tempered steel. Overhead stops shall be of non-handed design.

1) Specified Manufacturers: Rixson
2) Approved Substitutes: Sargent, Glynn Johnson

J. GASKETING AND THRESHOLDS

1. Provide continuous weatherseal on exterior doors and smoke, light, or sound seals on interior doors where indicated or scheduled. Provide intumescent seals as required to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies. Provide only those units where resilient or flexible seal strip is easily replaceable and readily available from stocks maintained by manufacturer.

2. Provide threshold units not less than 4" wide, formed to accommodate change in floor elevation where indicated, fabricated to accommodate door hardware and to fit door frames. All threshold units shall comply with the Americans with Disabilities Act (ADA).

   a. Specified Manufacturers: McKinney
   b. Approved Substitutes: Pemko, Reese, Zero

K. SILENCERS

1. Furnish rubber door silencers all hollow metal frames; two (2) per pair and three (3) per single door frame.

2.03 FINISHES

A. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18 or traditional U.S. finishes shown by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

PART III – EXECUTION

3.01 EXAMINATION

A. Contractor shall ensure that the building is secured and free from weather elements prior to installing interior door hardware. Examine hardware before installation to ensure it is free of defects.

3.02 INSTALLATION

A. Mount hardware units at heights indicated in the following applicable publications, except as specifically indicated or required to comply with the governing regulations.

1. "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute (DHI.)

2. NWWDA Industry Standard I.S.1.7, "Hardware Locations for Wood Flush Doors."

B. All hardware shall be applied and installed in accordance with best trade practice by an experienced hardware installer. Care shall be exercised not to mar or damage adjacent work.

C. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.

D. Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.03 FIELD QUALITY CONTROL

A. The Contractor shall comply with AIA A201 1997 section 3.3.1 which reads as follows: “The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the contract Documents give other specific instructions concerning these matters.”

B. Prior to the installation of hardware, manufacturer's representatives for locksets, closers, and exit devices shall arrange and hold a jobsite meeting to instruct the installing contractor's personnel on the proper installation of their respective products. A letter of compliance, indicating when this meeting is held and who is in attendance, shall be sent to the Architect and Owner.

C. The hardware supplier shall do a final inspection prior to building completion to ensure that all hardware was correctly installed and is in proper working order.

3.04 ADJUSTING, CLEANING, AND DEMONSTRATING

A. Adjust and check each operating item of hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly or as intended for the application made.

B. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore to proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

C. Instruct owner's personnel in the proper adjustment and maintenance of door hardware and hardware finishes and usage of any electronic devices.

3.05 PROTECTION

A. Contractor shall protect all hardware, as it is stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

3.06 HARDWARE SCHEDULE

A. The following schedule is furnished for whatever assistance it may afford the Contractor; do not consider it as entirely inclusive. Should any particular door or item be omitted in any scheduled hardware heading, provide door or item with hardware same as required for similar purposes. Hardware supplier is responsible for handing and sizing all products as listed in the hardware heading. Quantities listed are for each pair of doors, or for each single door.

B. Manufacturer's Abbreviations:

1. ADAM Adams Rite
2. MC McKinney
3. MW McKinney Weatherstrip
4. NO Norton
5. RX Rixson
6. SA Sargent

Hardware Sets

See hardware sets on drawing A-601.

END OF SECTION 08710

SECTION 08800 - GLASS AND GLAZING

1.0 GENERAL

The drawings, Instructions to Bidders, Form of Proposal, General Conditions, Supplementary General Conditions and Division 1 are included herein and govern work under this section.

1.1 DESCRIPTION OF WORK

A. Definitions: "Glass" includes prime glass, processed glass, and fabricated glass products. "Glazing" includes glass installation and materials used to install glass.

B. Included, but not necessarily limited to, are the following:

1) Insulating Glass
2) Glazing of windows, doors, transoms, side lights, and all other glazed openings as indicated.
3) Interior Frameless Glass and Glazed Office Partitions

1.2 QUALITY ASSURANCE

A. Prime Glass Manufacturer: One of the following for each type of glass:

1. ASG Industries, Inc.
2. C-E Glass Division
3. Ford Glass Company
4. Libbey-Owens-Ford Company
5. PPG Industries, Inc.
6. Planet Partitioning

B. SUBMITTALS

1. Samples: Furnish duplicate samples, for approval, of the various types of glass specified herein. Samples shall be 12" x 12" and shall include an assembled 12" x 12" insulating glass sample. Samples of other glazing materials shall be submitted in duplicate if requested by Architect.

2. Approved samples shall become the standard for comparison for all installed work.

3. Shop Drawings: Submit shop drawings and descriptive literature for all products for use. Shop drawings shall include full scale glazing details of window wall. Shop drawings shall be submitted in accordance with Division 1.

C. JOB CONDITIONS

1. Pre-installation: Meet with Glazier and other trades affected by glass installation, prior to beginning of installation. Do not perform work under adverse weather or job conditions. Install liquid sealants when temperatures are within lower or middle third of temperature range by manufacturer.

D. Specified Product Warrantee

1. Warrantee on Hermetic Seals: Provide insulating glass manufacturer's written warrantee, agreeing to, within specified period, furnish FOB project site, replacement units for insulating glass units which have defective hermetic seals (excluding that due to glass breakage); defined to include intrusion of moisture or dirt, internal condensation at temperatures above -20 degrees F (-31 degrees C), deterioration of internal glass coatings, and other visual evidence of seal failure or performance failure, provided manufacturer's instructions for handling, installation, protection and maintenance have been adhered to during warrantee period.

2.0 PRODUCTS

2.1 GLASS PRODUCTS

C. Insulating Glass

1. Insulating glass shall be DualPane as manufactured by DualPane, Inc. or equal product of Libbey-Owens-Ford of PPD Industries.

2. Where indicated "1" Insulating Glass", provide the following:
Units shall consist of 1/4" tinted clear polished plate glass outer pane, a 1/2" air space and a 1/4" clear polished plate glass inner pane. At tempered insulated glass provide: Units shall consist of tinted clear tempered glass outer panes, a ½" air space and a 1/4" clear tempered glass inner pane.

3. Panes shall be hermetically sealed with a metal to glass bond and separated with a dehydrated air space.

4. Separators between glass panes shall be hot dipped galvanized with welded corners. Glass to be metal shall be sealed with a primary seal of polyisobutalene and two-part polysulphide for the secondary seal. Unit shall be bonded with a continuous metal band and sealed with a two-part polysulphide between metal and glass. "U" factor for glass assembly shall be 0.69 or better. Shading coefficient shall be at least 0.54. Separator to be black finish.

D. Interior Frameless Glass and Glazed Office Partitions – Planet 20 single glazed partitioning system with hinged glass door

1. Product Reference:
   p20 Single Glazed Frameless Glazed Partition System

2. Strength Grade:
   BS 5234-2:1992 partitions
   Annex A (determination of partition stiffness)
   Maximum deflection allowed
   Medium Duty 20mm
   Annex G (Determination of resistance to crowd pressure)
   Horizontal uniformly distributed line load
   0.74kN/m
   1.5kN/m
   3.0kN/m
   BS 6180:2011 Barriers in and about buildings
   Horizontal uniformly distributed line load
   (L/65 or 25mm whichever is smaller)
   0.74kN/m
   1.5kN/m
   3.0kN/m

3. Fire Resistance of complete system to BS 476-22:
   Not applicable, please refer to the FireClear range for p20 Fire Rated options

4. Sound Insulation to EN ISO 10140-2 and ISO 717-1

5. Partition Height:
   See drawings.

6. Partition Abutments:
   Head Detail:
   No Deflection: 27mm deep x 20mm wide Aluminium Channel (K201-K204 to suit)
   Floor Detail:
   27mm deep x 20mm wide Two Part Aluminium Channel
   Wall Abutments:
   27mm deep x 20mm wide Two Part Aluminium Channel

7. Framing:
   Extruded Aluminium sections

8. Glazing Junctions/Corners:
   Linea dry joint

9. Skirting/Sills:
   Refer to floor detail options detailed above

10. Trims: Not applicable – Refer to framing/head/floor/wall abutment clauses

11. Glazing Type:

Single, offset glazed
½" tempered glass

12. Manifestation: See drawings.
Allowance of 2nr rows 50mm squares (minimum) Opal Frost

2.2 GLAZING SEALANTS AND COMPONENTS

A. General: provide color of exposed sealant/compound as selected by Architect from manufacturer's standard colors. Comply with manufacturer's recommendation for selection of hardness, depending upon the location of each application of each application, conditions at the time of installation, and performance requirements as indicated.Select materials, and variations or modifications, carefully for compatibility with surfaces contacted in the installation.

B. Silicone Glazing Compound

1. Silicone sealant 1200 as manufactured by general Electric Company or equal product of Dow Corning shall be used to set all joints as shown on drawings. Color shall be as selected by Architect from stock.

C. Elastomeric Glazing Compound

1. All channel glazing shall be with a one part, 100% liquid polymer, acrylic base sealant. Product shall be "Mono-Lasto-Metric" as manufactured by the Tremco Manufacturing Company or equal product of Pecora, Inc. or Toch Brothers, and shall be used in strict conformance with manufacturer's instructions. Color as selected by Architect.

2. Primers shall be used if and as recommended by manufacturer.

D. Elastomeric Glazing Compound

1. Elastic glazing compound shall be oleo-resinous, knife consistency sealant, for use on non-porous surfaces under compression. It shall be non-corrosive on metal.

2. Color shall be approximately the same as adjacent surfaces and shall be approved by Architect.

3. This compound shall be as manufactured by Tremco Manufacturing Company, Pecora, Incorporated, or Presstite Division of Martin Marietta Corp.

4. All elastic glazing compound shall be formulated from selected processed oils and pigments which will remain plastic and resilient over a long period of time. Comply with latest revision of the Aluminum Window Manufacturer's Association, dated July 15, 1967.

2.3 MISCELLANEOUS GLAZING MATERIALS

A. Cleaners, Primers and Sealers: Type recommended by sealant or gasket manufacturer.

B. Glazing Tape

1. Glazing tape shall be a polyisobutylene-butyl base with an integral shim equal to Tremco 440 Shimmed Tape, as manufactured by the Tremco Manufacturing Company. Tape and elastomeric sealing compound shall be by same manufacturer.
2. Verify thickness of tape required by glazing a sample window on the job. Sample shall be inspected and approved by Architect before proceeding with glazing work.

C. Spacer Shims and Setting Blocks:

1. All spacer shims shall be of 40 to 50 durometer neopreme.
2. All setting blocks shall be lead or 80 durometer neopreme as recommended by glass manufacturer based on weight of glass.
3. All spacer shims and setting blocks shall be at least 1/4" thick by 3" long by width of recess.

3.0 EXECUTION

3.1 STANDARDS AND PERFORMANCE

A. Watertight and airtight installation of each glass product is required, except as otherwise shown. Each installation must withstand normal temperature changes, wind loading, impact loading (for operating sash and doors), without failure including loss or breakage of glass, failure of sealants or gaskets to remain watertight and air tight, deterioration of glazing materials and other defects in the work.

B. Protect glass from edge damage during handling and installation, and subsequent operation of glazed components of the work. During installation, discard units with significant edge damage or other imperfections.

C. Labels

1. Deliver all glass on the job carefully paper packed and protected, each pane bearing manufacturer's identifying label, giving name, quality and grade of glass.

D. Glazing channel dimensions as shown are intended to provide for necessary bite on glass, minimum edge clearance, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by job conditions at time of installation.

E. Comply with combined recommendations and technical reports by manufacturers of glass and glazing products as used in each glazing channel, and with recommendations of Flat Glass Marketing Association "Glazing Manual", except where more stringent requirements are indicated.

F. Install insulating glass units to comply with recommendations by Sealed Insulating Glass Manufacturers Association, except as otherwise specifically indicated or recommended by glass and sealant manufacturers.

3.2 PREPARATION FOR GLAZING

A. Clean glazing channel and other framing members to receive glass, immediately before glazing. Remove lacquer from metal surfaces where elastomeric sealants are used.

B. Remove all coatings in glazing rebate area with a solvent that will not etch or mar surface of metal, recommended be manufacturer of glazing compound.

C. All surfaces to be glazed shall be free of moisture.

D. Avoid glazing at temperature below 40 degrees F. If glazing schedule requires work during cold periods, warm the glass and rabbeted surfaces to avoid condensation.

E. Remove manufacturer's instruction tags from windows.

F. Cover metal surfaces liable to be damaged by smear of sealing compound with tape. Remove tape after glazing.

G. Prepare all glazing compounds in strict accordance with manufacturer's instructions. Compounds shall not be cut or thinned.

H. Apply primer or sealant to joint surfaces where recommended by sealant manufacturer.

3.3 GLAZING

A. Install setting blocks of proper size in still rabbet, located 1/4th of glass width from each corner. Set blocks in thin course of heel-bead compound, if any.

B. Provide spacers inside and out, of proper size and spacing, for glass sizes larger the 50 united inches, except where gaskets or preshimmed tapes are used for glazing. Provide 1/8" minimum bite of spacers on glass and use thickness equal to sealant width, except with sealant tape use thickness slightly less than final compresses thickness of tape.

C. Set units of glass in each series with uniformity of pattern, draw, bow and similar characteristics.

D. Voids and Filler Rods Prevent exudation of sealant or compound by reforming voids or

installing filler rods in channel at heel of jamb and head (do not leave voids in sill channels), except as otherwise indicated and depending on light size, thickness and type of glass, and complying with manufacturer's recommendations.

E. Force sealants into channel to eliminate voids and to ensure complete "wetting' or bond of sealant to glass and channel surfaces.

F. Tool exposed surfaces of glazing liquids and compounds to provide a substantial "wash" away from glass. Install pressurized tapes and gaskets to protrude slightly out of channel, so as to eliminate dirt and moisture pockets.

G. Clean and trim excess glazing materials from glass and stops or frames promptly after installation, and eliminate stains and discolorations.

H. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage to ensure that gasket will not "walk" out when installation is subjected to movement. Anchor gasket to stop with matching ribs, or by proven adhesives, including embedment of gasket tail in cured heel bead.

I. Gasket Glazing: Miter cut and bond ends together at corners where gaskets are used for channel glazing, so that gaskets will no pull away from corners and result in voids or leaks in glazing system.

3.4 CURE, PROTECTION AND CLEANING

A. Protect exterior glass from breakage immediately upon installation, by use of crossed streamers attached to framing and held away from glass. Do not apply markers to surfaces of glass. Remove nonpermanent labels and clean surfaces. Cure sealants for high early strength and durability.

B. Remove and replace glass which is broken, chipped, cracked, abraded or damaged in other ways during construction period, including natural causes, accidents and vandalism.

C. Wash and polish glass on both faces not more than 4 days prior to date scheduled for inspections intended to establish date of substantial completion in each area of project. Comply with glass product manufacturer's recommendations for final cleaning.

END OF SECTION

SECTION 08970 – STRUCTURAL GLASS WALLS

PART 1: GENERAL

1.1 SUMMARY

A. Section Includes: Glass, glazing and connections for the all glass facade in accordance with the Contract Documents.

B. Related Sections:
Section 055000 – Miscellaneous Steel
Section 079000 – Sealants: Sealants for glazing
Section 088000 – Glass and Glazing

C. Substitutions: Manufacturer:

1. The following specifications and related drawings are based on the performance of the Pilkington Planar System as a standard of quality. Other manufacturers listed below will be accepted **if and only if** they comply in all respects with the drawings and profiles shown, as well as all elements of the specifications contained herein. **Manufacturer must have a minimum of five years experience in the U.S./Canada in tall structural glass projects and must submit a minimum of ten other projects completed in the U.S. within the last five years similar to the scope of this project.**

2. The substitution request must be submitted no less than 15 days prior to bid with all testing and performance criteria to demonstrate compliance with specifications for Architect review. Requests submitted after this time will not be accepted.

3. Other acceptable manufacturers (provided they comply with all aspects of the drawings and specifications) are:
    a. Seele
    b. Gartner

1.2 QUALITY ASSURANCE

A. Sole Source Responsibility: Glazing Material and System Design: Glass, glazing, system design and accessories are the sole responsibility of Pilkington Architectural.

B. Sole Source Responsibility: Provide installation by installer acceptable to Pilkington Architectural. Provide a letter signed by representative of Pilkington Architectural with company's authorization stating that installer is acceptable and qualified to install system.

1.The installer of the Pilkington Planar System is responsible for supplying and erecting the complete structural glazing system, coordinating and maintaining tolerances between structure and glazing system with individual suppliers and manufacturers, and installation of glazing system.

C. Where safety glass is indicated or required by authorities having jurisdiction, provide type of products which comply with ANSI Z97.1 and testing requirements of 16 CFR, Part 1201 for category II materials.

1.3 SYSTEM DESCRIPTION

A. Design Requirements: Per ASCE-7:

1. Wind Load (Typical): 110 MPH
2. Seismic: Wall to accommodate no more than .002H.
3. Live load deflection of supporting structure if any: to be no more than 0.25".

B. Pilkington Planar Glazing System:

1. Fittings are designed to give flush appearance to outward surface of glazing system. **NO EXTERIOR FITTINGS OR PLATES WILL BE PERMITTED.**

2. The design of the Planar fittings is the sole responsibility of Pilkington Architectural

3. Spring plate members are designed to prevent high stress concentration at the hole positions and must cope with:

   a. Negative and positive wind loading
   b. Seismic loads
   c. Thermal movement
   d. Construction tolerances
   e. Live load and dead load movements

4. Movement diaphragms of stainless steel and durable flexible discs must be incorporated in connections to accommodate oversize holes in spring plate members, which allow for thermal movement and glass manufacturing tolerances.

5. The system shall provide for unitized pre-fixing of all items to glass prior to erection.

1.4 SUBMITTALS

A. Submit the following in accordance with Section: 01300.

1. Shop Drawings: Shop drawings shall clearly indicate materials and methods, indicate coordination with other trades, and bear signed approval of the glazing system manufacturer and the glazing system installer, as well as the stamp of a

licensed Professional Engineer in the State of to be filled in by architect.

2. Product Data: Material description and installation instructions for tapes, compounds, gaskets and other materials.

3. Samples:
   a. Submit one sample of glass and glazing materials required for the Project. Samples of glass shall be 12" x 12", samples of sealant or gasket shall be 12" long.

   b. Submit samples of hardware complete with glass, bolt and accessories.

4. Quality Assurance Compliance: Submit letters from Pilkington's authorized representative and from the project installer stating that they are in compliance with the requirements of the Contract Documents.

5. Calculations: Submit calculations proving structural glazing systems performance and compliance with specified loads with stamp of licensed Professional Engineer registered in the State of New York.

6. Test Reports: Submit test reports from an independent laboratory in the United Steates certifying that the structural glazing system proposed for use has been tested. The system tested must be similar in type of materials and design shown on Architect's drawings, utilizing **countersunk bolted** attachments through the glass. If existing test reports are to be submitted, then those tests shall have been carried out to loads at least equal to or greater than those called for in this specification. If test reports are not available, system shall be tested. All costs for testing will be born by the glass system manufacturer. No system shall be accepted that has not been tested.

7. **Letter signed by the glass manufacturer clearly stating the glass and fittings to be used on the project of the manufacturer's system are acceptable to the manufacturer and that they have reviewed the contract documents and will issue a project specific twelve (12) year warranty to include the entire system. Letters signed by the subcontractor for this section are not acceptable. System must be manufactured from one source. Glass cannot be supplied by one manufacturer and hardware from another to comply with this warranty.**

1.5 WARRANTIES

A. Manufacturer Warranty: Comprehensive system warranty must be issued by the Pilkington Planar or equal manufacturer for a period of twelve (12) years for design integrity, weatherability and durability of the system. **Partial warranties for the glass or fittings only issued by anyone other than the glass system manufacturer will not be acceptable.**

B. Installer Warranty: Warrant the installation for a period of five years for installation and repairs of failures. Provide written requirements for notification of installer and terms for maintaining warranty provisions. Do not contradict the requirements of the Contract Documents.

C. The Warranties submitted under this Section shall not deprive the Owner of other rights or remedies that the Owner may have under other provisions of the Contract Documents and the laws of governing jurisdictions and is in addition to and runs concurrently with other warranties made by the Contractor under requirements of the Contract Documents.

PART 2: PRODUCTS

2.1 MATERIALS

A. Structural Glass Wall System: The drawings and specifications herein are based on The Pilkington PLANAR system distributed by: W&W Glass, LLC, 302 Airport Executive Park, Nanuet, NY 10954. Contact: W&W Glass, LLC; E-mail: ww@wwglass.com; Phone: 1-800-452-7925; wwglass.com.

B. Glass:

1. All glass must be fully tempered and heat soaked. Glass units will have the following makeup:
   a. Exterior Face Glass to be 34mm double glazed unit with 12mm Optiwhite exterior lite with Suncool 66/33 Pro-T coating on surface #2, 16mm airspace, 6mm Optiwhite.

   b. Glass fins to be 15mm Optiwhite.

2. Glass must be tempered to a minimum compressive strength of 16,000 PSI. Glass tempered to lower strengths will not be accepted.

3. Statistical heat soaking of tempered glass will not be acceptable. All tempered glass must be heat soak tested to help lower the probability of spontaneous breakage due to nickel sulphide inclusions. The heat soak test is a destructive test. It converts nickel sulfide inclusions from alpha phase to beta phase so that the glass will fracture in test chamber if present in certain layers of glass. Heat soak testing must comply with European DIN Standard 18516-4 and must be a minimum 15 hour cycle at a temperature of 290C. Written warranties against nickel sulfide inclusions in lieu of heat soaking will not be accepted.

4. All glass must be horizontally tempered eliminating tong marks.

5. All edges will be ground flat with a frosted appearance unless otherwise noted.

6. All edgework, holes and notches in the tempered glass panels will be completed before tempering and shall comply with the following requirements:

a. Dimensional tolerance on panel size will be ± 1 mm of the theoretical dimension required for dimensions under 2 meters and 2 mm for dimensions greater than 2 meters.

b. Squareness of each panel will be within 3 mm.

c. Bow allowance is 0.1%.

d. The positional tolerances on all holes will be ± 1 mm from a single datum point.

7. Flatness of glass is a key element of this specification. Average rollerwave distortion must be certified not to exceed an average of 0.0007 inches when measured from peak to valley. A site inspection, if required for roller wave and bow tolerances should be from a minimum distance of 3 meters.

8. All glass must be manufactured in a factory where the quality control procedures are created under the terms of ISO 9000 and are independently monitored.

9. Pre-stress glass around holes to a level which is compatible with the design and sue of the fittings. Check by differential surface refractometer on stress level.

C. Fittings:

1. Planar fittings shall be predominantly manufactured from stainless steel Grade 316. Standard fittings will be Planar Type 905J or equal. Spider type fittings are not acceptable. Countersunk bolt to be no larger than M8 for a 19mm countersunk hole. These will be moment fixed to the glass hole.

2. The subcontractor shall demonstrate to the Architect's satisfaction that the stresses induced in the glass by these fittings are compatible with the strength of the glass and the needs of the performance section of this specification.

3. The finish of all fittings will be “as machined”.

4. Spring plates shall be designed to the Architect's specification. The design shall be shown by the Subcontractor to be compatible with the performance specification in all respects.

4.1 Spring plates shall provide a tolerance capability which will cope with the full range of movements shown below:

a. Thermal movements occurring as a result of differential coefficients of thermal expansion within the range specified. The components used within the system shall withstand noiselessly all thermal movements without any buckling, distortion, cracking, failure of joint seals or undue stress on the glass or fixing assemblies.

b. Deflection of edge beams due to loading applied after erection of the

cladding to magnitude specified.

c. Maximum side sway of structure due to wind load to the magnitude specified or seismic movement to the degree specified.

d. Deflection due to self-weight of the Planar system.

e. Inward and outward movements due to the design wind loads specified.

5. Countersunk Planar bolts will be bright machine finished, socket head bolt diameter 1-1/8" with hexagonal shank, stainless steel Type 316.

5.1 No exterior plates, caps, disks or buttons will be permitted.

6. Bushings will be Nylatron Polyamide.

7. Gaskets will be fully vulcanized fiber, neoprene or precured silicone.

8. Perimeter channels to be ¼" x 2" x 4" clear anodized aluminum extrusion.

PART 3: EXECUTION

3.1 EXAMINATION

A. Examine surfaces receiving the Work. Verify dimensions of in-place and subsequent construction. Follow the recommendations of the FGMA as to inspection procedures. Do not begin work until unsatisfactory conditions have been corrected. Installation of work shall constitute acceptance of the related construction.

3.2 PREPARATION:

A. Pre-Installation Meeting: Meet at the project site with the representatives of the glass and glazing materials manufacturers, architectural exposed structural steel fabricator and erector, sealant manufacturer, the glazing installer, Architect's representative and Owner's representative. Review the glazing procedure and schedule, including the method of delivering and handling glass, and installing glazing materials. The chemical compatibility of all glazing materials and framing sealants with each other and with like materials used in glass fabrication shall be established.

3.3 INSTALLATION OF GLASS:

A. Install in accordance with Pilkington Architectural's requirements and the shop drawings.

B. Employ only experienced glaziers who have had previous experience with the materials and systems being applied. Use tools and equipment recommended by the glass manufacturer.

C. Plate to plate joints of glass are sealed with silicone sealant. Joint dimensions shall be designed to be compatible with sealant properties and live load movement of the structure.

D. Bolt Torque: Torque bolts to torques specified on shop drawings using calibrated tool. Lock torqued bolts into position to prevent backoff. Reset calibrations regularly to ensure accurate torquing.

E. Maintain a minimum temperature of 40 degrees F. during glazing unless the manufacturer of the glazing material specifically agrees to application of this material at lower temperature. If job progresses or other conditions require glazing work when temperature is below 40 degrees F. (or below the minimum temperature recommended by the manufacturer), consult the manufacturer and establish the minimum provisions required to ensure satisfactory work.

F. Clean glazing connectors receiving glazing materials of deleterious substances which might impair the work. Remove protective coatings which might fail in adhesion or interfere with bond of sealants. Comply with manufacturer's instructions for final wiping of surfaces immediately before application of primer and glazing sealants. Wipe metal surfaces with xylol or toluol.

G. Inspect each unit of glass immediately before installation. Glass which has significant impact damage at edges, scratches or abrasion of faces, or any other evidence of damage shall not be installed.

H. Sealants: Prime surfaces to receive glazing sealants where required, in accordance with manufacturer's recommendations, using recommended primers.

I. Locate setting blocks, if required by the drawings, at the quarter points of sill, but no closer than 6 inches to corners of glass. Use blocks of proper sizes to support the glass in accordance with manufacturer's recommendations.

J. Provide spacers to separate glass from spring plates.

K. Set glass in a manner which produces greatest possible degree of uniformity in appearance. Face all glass, which has dissimilar faces, with matching faces in the same direction.

L. Use masking tape or other suitable protection to limit coverage of glazing materials to the surfaces intended for sealants.

M. Tool exposed surfaces of glazing materials.

N. Clean excess sealant from glass and support members immediately after application, using solvents or cleaners recommended by manufacturers.

A.4 CURING, PROTECTION, AND CLEANING

A. Cure sealants in accordance with the manufacturer's instructions to attain maximum durability and adhesion to glass.

B. Clean all surfaces after installation, leaving all in a clean and workmanlike manner.

C. Final cleaning and protection after installation is the responsibility of others.

END OF SECTION

SECTION 09250 - METAL STUDS, GYPSUM WALLBOARD & GYPSUM SHEATHING

1.0 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Extent of each type of gypsum drywall construction required is indicated on Drawings.

B. This Section includes the following types of gypsum board construction

1. Interior Gypsum Board
2. Exterior Gypsum Sheathing

1.3 DEFINITIONS

A. Gypsum Board Construction Terminology: Refer to ASTM C 11 and GA 505 for definitions of terms for gypsum board construction not otherwise defined in this section or other referenced standards.

1.4 SUBMITTALS

A. Product data from manufacturers for each type of product specified.

1.5 CLOSEOUT SUBMITTALS

A. Upon completion of the Work of this Section, Contractor shall submit to the Construction Manager, all required closeout documents.

B. Contractor shall submit a marked-up set of drawings indicating any changes made during construction to the Construction Manager.

C. Upon completion, submit to the Construction Manager, a Contractor's Affidavit of Payment of Debts and Claims, and Release of Liens.

D. Refer to General Conditions for additional requirements.

1.6 QUALITY ASSURANCE

A. Fire-Resistance Ratings: Where indicated, provide materials and construction which are identical to those of assemblies whose fire resistance rating has been determined per ASTM E 119 by a testing and inspecting organization acceptable to authorities having jurisdiction.

1. Provide fire-resistance-rated assemblies identical to those indicated by reference to GA File No's. in GA-600 "Fire Resistance Design Manual" or to design designations in U.L. "Fire Resistance Directory" or in listing of other testing and agencies acceptable to authorities having jurisdiction.

B. Single Source Responsibility: Obtain each type of gypsum board and related joint treatment materials from a single manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.

C. Handle gypsum boards to prevent damage to edges, ends, and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1.8 PROJECT CONDITIONS

A. Environmental Conditions, General: Establish and maintain environmental conditions for application and finishing gypsum board to comply with ASTM C 840 and with gypsum board manufacturer's recommendations.

B. Minimum Room Temperatures: For nonadhesive attachment of gypsum board to framing, maintain not less than 40 deg F (4 deg C). For adhesive attachment and finishing of gypsum board maintain not less than 50 deg F (10 deg C) for 48 hours prior to application and continuously thereafter until drying is complete.

C. Ventilate building spaces to remove water not required for drying joint treatment materials. Avoid drafts during dry, hot weather to prevent materials form drying too rapidly.

2.0 PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include, but are not limited to, the following:

B. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

1. Steel Framing and Furring:
   a. Gold Bond Building Products Div., National Gypsum Co.
   b. Marino Industries Corp.
   c. United States Gypsum Co.

2. Gypsum Boards and Related Products:

   a. Domtar Gypsum Co.
   b. Georgia-Pacific Corp.
   c. Gold Bond Building Products Div., National Gypsum Co.
   d. United States Gypsum Co.

2.2 STEEL FRAMING COMPONENTS FOR SUSPENDED AND FURRED CEILINGS

A. General: Provide components which comply with ASTM C 754 for materials and sizes, unless otherwise indicated.

B. Concrete Inserts: Inserts designed for attachment to concrete forms and for embedment in concrete, fabricated from corrosion-resistant materials, with holes or loops for attachment of hanger wires and capability to sustain, without failure, a load equal to 3 times that imposed by ceiling construction, as determined from testing per ASTM E 488, conducted by an independent testing laboratory.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper.

D. Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.

E. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.

F. Channels: Cold-rolled steel, 0.0598 inch minimum thickness of base (uncoated) metal and 7/16 inch wide flanges, protected with rust-inhibitive paint, and as follows:

1. Carrying Channels: 1-1/2 inch deep, 475 lbs per 1000 ft., unless otherwise indicated.
2. Furring Channels: 3/4 inch deep, 300 lbs per 1000 ft., unless otherwise indicated.

2.3 STEEL FRAMING FOR WALLS AND PARTITIONS

A. Steel Studs and Runners: ASTM C 645, with flange edges of studs bent back 90 deg and doubled over to form 3/16" minimum lip (return) and complying with the following requirements for minimum thickness of base (uncoated) metal and for depth:

1. Thickness: As indicated.
2. Depth: 3-5/8 inches, unless otherwise indicated.
3. All metal studs extending to underside of metal roof deck and over 12'-0" in height shall be 20 gauge. Partitions under 12'-0" in height shall be 25 gauge. All studs shall be rolled formed from galvanized steel with matching sill and plate runners. Studs shall be 16" o.c. in sizes as shown on drawings.

B. Steel Rigid Furring Channels: ASTM C 645, hat-shaped, depth and minimum thickness of base (uncoated) metal as follows:

1. Depth: 7/8 inch.
2. Thickness: 0.0329 inch, unless otherwise indicated.

C. Z-Furring Members: Manufacturer's standard zee-shaped furring members with slotted or nonslotted web, fabricated from hot-dip galvanized steel sheet complying with ASTM A 525, Coating Designation G60; with a minimum base metal (uncoated) thickness of 0.0179 inch, face flange of 1-1/4 inch, wall-attachment flange of 7/8 inch, and of depth required to fit insulation thickness indicated.

D. Fasteners: Provide fasteners of type, material, size, corrosion resistance, holding power and other properties required to fasten steel framing and furring members securely to substrates involved; complying with the recommendations of gypsum drywall manufacturers for applications indicated.

2.4 GYPSUM BOARD

A. General: Provide gypsum board of types indicated in maximum lengths available to minimize end-to-end joints.

1. Thickness: Provide gypsum board in thicknesses indicated, or if not otherwise indicated, in either 1/2 inch or 5/8 inch thicknesses to comply with ASTM C 840 for application system and support spacing indicated.

B. Gypsum Wallboard: ASTM C 36, and as follows:

1. Type: Regular, unless otherwise indicated.
2. Type: Type X for fire-resistance-rated assemblies.
3. Edges: Tapered.

4. Thickness: 5/8 inch, unless otherwise indicated.

C. Products: Subject to compliance with requirements, provide one of the following products where Type X gypsum wallboard is indicated:

1. "Gyprock Fireguard 'C' Gypsum Board"; Domtar Gypsum Co.
2. "Fire-Shield G"; Gold Bond Building Products Div., National Gypsum Co.
3. "SHEETROCK Brand FIRECODE 'C' Gypsum Panels"; United States Gypsum Co.

D. Water-Resistant Gypsum Backing Board: ASTM C 630, and as follows:

1. Type: Regular, unless otherwise indicated.
2. Type: Type X for fire-resistance-rated assemblies.
3. Thickness: 5/8 inch where indicated.

E. Exterior Gypsum Sheathing

1. Thickness: 5/8 inch where indicated.
2. “Gyproc” sheathing ASTM C79.
3. Jumbo Sheathing; Gold Bond National Gypsum Co.

2.5 TRIM ACCESSORIES

A. Cornerbead and Edge Trim for Interior Installation: Provide corner beads, edge trim and control joints which comply with ASTM C 1047 and requirements indicated below:

1. Material: Formed metal, or metal combined with paper, with metal complying with the following requirement:

a. Sheet steel zinc-coated by hot-dip process.

2. Edge trim shapes indicated below by reference to designations of Fig. 1 in ASTM C 1047:

a. "LC" Bead, unless otherwise indicated.
b. "L" Bead where indicated.

3. One-Piece Control Joint: Formed with vee-shaped slot per Fig. 1 in ASTM C 1047, with slot opening covered with removable strip.

2.6 GYPSUM BOARD JOINT TREATMENT MATERIALS

A. General: Provide materials complying with ASTM C 475, ASTM C 840, and recommendations of manufacturer of both gypsum board and joint treatment materials for the application indicated.

B. Joint Tape: Paper reinforcing tape, unless otherwise indicated.

1. Use pressure sensitive or staple-attached open-weave glass fiber reinforcing tape with compatible joint compound where recommended by manufacturer of gypsum board and joint treatment materials for application indicated.

2. Setting-Type Joint Compounds: Factory-prepackaged, job-mixed, chemical-hardening powder products formulated for uses indicated.

a. Where setting-type joint compounds are indicated for use as taping and topping compounds, use formulation for each which develops greatest bond strength and crack resistance and is compatible with other joint compounds applied over it.
b. For prefilling gypsum board joints, use formulation recommended by gypsum board manufacturer for this purpose.
c. For filling joints and treating fasteners of water-resistant gypsum backing board behind base for ceramic tile, use formulation recommended by gypsum board manufacturer for this purpose.

D. Drying-Type Joint Compounds: Factory-prepackaged vinyl-based products complying with the following requirements for formulation and intended use.

1. Job-Mixed Formulation: Powder product for mixing with water at Project site.
2. Taping compound formulated for embedding tape and for first coat over fasteners and flanges of corner beads and edge trim.
3. Topping compound formulated for fill (second) and finish (third) coats.
4. All-purpose compound formulated for use as both taping and topping compound.

2.7 MISCELLANEOUS MATERIALS

A. General: Provide auxiliary materials for gypsum drywall construction which comply with referenced standards and the recommendations of the manufacturer of the gypsum board.

B. Laminating Adhesive: Special adhesive or joint compound recommended for laminating gypsum boards.

C. Spot Grout: ASTM C 475, setting-type joint compound of type recommended for spot grouting hollow metal door frames.

D. Gypsum Board Screws: ASTM C 1002.

E. Concealed Acoustical Sealant: Nondrying, nonhardening, nonskinning, nonstaining, nonbleeding, gunnable sealant complying with requirement specified in Division-7 section "Joint Sealers."

F. Sound Attenuation Blankets: Unfaced mineral fiber blanket insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing); and as follows:

1. Mineral Fiber Type: Fibers manufactured from glass.

3.0 EXECUTION

3.1 EXAMINATION

A. Examine substrates to which drywall construction attaches or abuts, preset hollow metal frames, cast-in-anchors, and structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of drywall construction. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Ceiling Anchorages: Coordinate installation of ceiling suspension system with installation of overhead structural systems to ensure that inserts and other structural anchorage provisions have been installed to receive ceiling anchors in a manner that will develop their full strength and at spacing required to support ceiling.

1. Furnish concrete inserts and other devices indicated, to other trades for installation well in advance of time needed for coordination with other construction.

B. After sprayed-on fireproofing has been applied, remove only as much fireproofing as needed to complete installation of drywall construction. Protect fireproofing that remains from damage.

3.3 INSTALLATION OF STEEL FRAMING, GENERAL

A. Steel Framing Installation Standard: Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation.

B. Install supplementary framing, blocking and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar construction to comply with details indicated and with recommendations of gypsum board manufacturer, or if none available, with "Gypsum Construction Handbook" published by United States Gypsum Co.

C. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement, at locations indicated below to comply with details shown on Drawings:

1. Where edges of suspended ceilings abut building structure horizontally at ceiling perimeters or penetration of structural elements.

2. Where partition and wall framing abuts overhead structure.
   a. Provide slip or cushioned type joints as detailed to attain lateral support and avoid axial loading.

D. Do not bridge building expansion and control joints with steel framing or furring members; independently frame both sides of joints with framing or furring members or as indicated.

3.4 INSTALLATION OF STEEL FRAMING FOR SUSPENDED AND FURRED CEILINGS

A. Secure hangers to structural support by connecting directly to structure where possible, otherwise connect to anchorage devices or fasteners as indicated.

1. Do not attach hangers to metal deck tabs.
2. Do not attach hangers to metal roof deck.
3. Do not attach hangers to underside of concrete slabs with powder-actuated fasteners.

B. Do not connect or suspend steel framing from ducts, pipes or conduit.

C. Keep hangers and braces 2 inches clear of ducts, pipes and conduits.

D. Sway-brace suspended steel framing with hangers used for support.

E. Install suspended steel framing components in sizes and at spacings indicated but not less than that required by referenced steel framing installation standard.

1. Wire Hangers: 0.1620 inch diameter (8 gage), 4 ft. on center.
2. Carrying Channels (Main Runners): 1-1/2 inch, 4 ft. on center.
3. Rigid Furring Channels (Furring Members): 16 inches on center.

F. Installation Tolerances: Install steel framing components for suspended ceilings so that cross furring members or grid suspension members are level to within 1/8 inch in 12 ft. as measured both lengthwise on each member and transversely between parallel members.

G. Wire-tie or clip furring members to main runners and to other structural supports as indicated.

3.5 INSTALLATION OF STEEL FRAMING FOR WALLS AND PARTITIONS

A. Install runners (tracks) at floors, ceilings and structural walls and columns where gypsum drywall stud system abuts other construction.

B. Installation Tolerances: Install each steel framing and furring member so that fastening surface do not vary more than 1/8 inch from plane of faces of adjacent framing.

C. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum board. See drawings for extent of partition types and installation techniques.

D. Terminate partition framing at suspended ceilings where indicated.

E. Install steel studs and furring in sizes and at spacings indicated but not less than that required by referenced steel framing installation standard.

1. For single layer construction: 16 inches on center.

F. Install steel studs so that flanges point in the same direction and gypsum boards can be installed in the direction opposite to that of the flange.

G. Frame door openings to comply with details indicated, with GA-219 and with applicable published recommendations of gypsum board manufacturer. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

1. Extend vertical jamb studs through suspended ceilings and attach to underside of floor or roof structure above as detailed on drawings.

H. Frame openings other than door openings to comply with details indicated, or if none indicated, in same manner as required for door openings; and install framing below sills of openings to match framing required above door heads.

3.6 APPLICATION AND FINISHING OF GYPSUM BOARD, GENERAL

A. Gypsum Board Application and Finishing Standard: Install and finish gypsum board to comply with ASTM C 840.

B. Install sound attenuation blankets where indicated, prior to gypsum board unless readily installed after board has been installed.

C. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 24 inches in alternate courses of board.

D. Install ceiling boards across framing in the manner which minimizes the number of end-butt joints, and which avoids end joints in the central area of each ceiling. Stagger end joints at least 24 inches.

E. Install wall/partition boards in manner which minimizes the number of end-butt joints or avoids them entirely where possible. At stairwells and similar high walls, install boards horizontally with end joints staggered over studs.

F. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch open space between boards. Do not force into place.

G. Locate either edge or end joints over supports, except in horizontal applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

H. Attach gypsum board to steel studs so that leading edge or end of each board is attached to open (unsupported) edge of stud flange first.

I. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.

J. Spot grout hollow metal door frames for solid core wood doors, hollow metal doors and doors over 32 inches wide. Apply spot grout at each jamb anchor clip just before inserting board into frame.

K. Form control joints and expansion joints at locations indicated, with space between edges of boards, prepared to receive trim accessories.

L. Cover both faces of steel stud partition framing with gypsum board in concealed spaces (above ceilings, etc.), except in chase walls which are braced internally.

1. Except where concealed application is indicated or required for sound, fire, air or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. area, and may be limited to not less than 75 percent of full coverage.
2. Fit gypsum board around ducts, pipes, and conduits.

M. Isolate perimeter of non-load-bearing drywall partitions at structural abutments. Provide 1/4 inch to 1/2 inch space and trim edge with "U" bead edge trim. Seal joints with acoustical sealant.

N. Space fasteners in gypsum boards in accordance with referenced gypsum board application and finishing standard and manufacturer's recommendations.

3.7 METHODS OF GYPSUM BOARD APPLICATION

A. Single-Layer Application: Install gypsum wallboard as follows:

1. On ceilings apply gypsum board prior to wall/partition board application to the greatest extent possible.

2. On partitions/walls apply gypsum board vertically (parallel to framing), unless otherwise indicated, and provide sheet lengths which will minimize end joints.

B. Wall Tile Base: Where drywall is base for thin-set ceramic tile and similar rigid applied wall finishes, install gypsum backing board.

1. In "dry" areas install gypsum backing board or wallboard with tapered edges taped and finished to produce a flat surface.
2. At showers, tubs and similar "wet" areas, install water- resistant gypsum backing board to comply with ASTM C 840 and recommendations of gypsum board manufacturer.

C. Single-Layer Fastening Methods: Apply gypsum boards to supports as follows:

1. Fasten with screws.

3.8 INSTALLATION OF DRYWALL TRIM ACCESSORIES

A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.

B. Install corner beads at external corners.

C. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where "U" bead (semi-finishing type) is indicated.

1. Install "L" bead where edge trim can only be installed after gypsum board is installed.
2. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

D. Install U-bead where indicated, and where exterior gypsum board edges are not covered by applied moldings or indicated to receive edge trim with face flanges covered with joint

compound.

E. Install control joints at locations indicated, or if not indicated, at spacings and locations required by referenced gypsum board application and finish standard, and approved by the Architect for visual effect.

3.9 FINISHING OF DRYWALL

A. General: Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects and elsewhere as required to prepare work for decoration.

B. Prefill open joints and rounded or beveled edges, if any, using setting-type joint compound.

C. Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.

D. Finish interior gypsum wallboard by applying the following joint compounds in 3 coats (not including prefill of openings in base), and sand between coats and after last coat:

1. Embedding and First Coat: Ready-mix drying-type all-purpose or taping compound.
2. Fill (Second) Coat: Ready-mix drying-type all-purpose or topping compound.
3. Finish (Third) Coat: Ready-mix drying-type all-purpose or topping compound.

E. Partial Finishing: Omit third coat and sanding on concealed drywall construction which is indicated for drywall finishing or which requires finishing to achieve fire-resistance rating, sound rating or to act as air or smoke barrier.

3.10 PROTECTION

A. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall construction being without damage or deterioration at time of Substantial Completion.

END OF SECTION

SECTION 09300 - TILE (CERAMIC)

1.0 GENERAL

The drawings, Instructions to Bidders, Form of Proposal, General Conditions, Supplementary General Conditions and Division 1 are included herein and govern work under this section.

1.1 DESCRIPTION OF WORK

A. Definitions: Tile includes ceramic surfacing units made from clay or other ceramic materials. The types of work of this section include:

1. Ceramic tile, floors/walls
2. Tile base, treads and trim
3. Special shapes as required or indicated
4. Setting beds as required or indicated
5. Grout and setting materials
6. Cutting and setting materials
7. Cutting, drilling and fitting tile work in connection with work by others
8. Waterproofing, uncoupling and drainage membranes
9. Edge protection and control joints

1.2 RELATED SECTIONS

A. Section 03300- Cast In Place Concrete
B. Section 03350- Concrete Finishing: concrete floor finishing
C. Section 05510- Metal Stairs: tread reinforcing
D. Section 06100- Rough Carpentry: plywood subfloor and underlayment
E. Section 07900- Joint Sealers
F. Section 09250-Gypsum Board
G. Section 15400- Plumbing Fixtures and Equipment

1.3 REFERENCES

A. ANSI A108.1-1999: Installation of Ceramic Tile
B. ANSI A137.1-1998: Ceramic Tile
C. ANSI C144-99: Standard Specification for Masonry Aggregates
D. ANSI C150-90: Standard Specification for Portland Cement
E. ASTM C207-91 (1992): Standard Specification for Hydrated Lime
F. ASTM C503-99: Standard Specification for marble Dimension Stone
G. ASTM C568-99: Standard Specification for Limestone Dimension Stone
H. ASTM C615-99: Standard Specification for Granite Dimension Stone
I. ASTM C629-99: Standard Specification for Slate Dimension Stone
J. ASTM C847-95: Standard Specification for Reinforcing Metal lath

1.4 QUALITY ASSURANCE

A. Manufacturer: Provide products by the following for type of tile:
** See A-600's for all specified product information and coordinating base material.*

B. Tile Manufacturing Standard: TCA 137.1 Furnish tile complying with Standard Grade requirements unless indicated otherwise.

C. Proprietary Materials: Handle, store, mix and apply proprietary setting and grouting materials in compliance with manufacturer's instructions.

1. Provide materials obtained from one source for each type and color of tile, grout, and setting materials.

D. Certificates:

1. Master Grade Certificates:
   a. Conform to ANSI A 137.1, standard grade

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's technical information and installation instructions for materials required, except bulk materials. Include certifications and other data to show compliance with these specifications.

B. Submit Manufacturer’s maintenance guides for Owner’s use in maintaining all ceramic tile work included for project.

C. Submit shop drawings for architect’s review showing location of expansion joints based on building control joints, cold joints, sawed joints and recommended expansion joints based on TCA Specifications.

1.6 SAMPLES

A. Submit samples in duplicate for approval showing quality, color, texture and finish for each kind of tile. Submit 12" x 12" panels of floor tile patterns and all custom patterns.

1. Wall and Floor Tile:
   a. Panel for each color, pattern and type
   b. Approximate panel size: 12” x 12”, mounted to ¾” plywood backer

B. No work for which such samples are required shall proceed until samples have been approved by the Architect, and all tile work shall be executed in strict accordance with the approved samples.

1.7 DELIVERY AND STORAGE OF TILE

A. All tile shall be graded, sealed and delivered in accordance with Department of Commerce Simplified Practice Recommendation R-61, latest issue, and this specification.

B. Deliver all tile in unbroken packages bearing the brand and manufacturer's name and store them on platforms, properly covered to protect them from moisture, damage and contamination.

C. Keep all containers in which tiles are packed, dry until tiles are removed. Take every precaution to see that tiles are not stained.

D. Manufactured mortars and grouts to contain hallmarks certifying compliance with referenced standards and be types recommended by the tile manufacturer for application.

1.8 CERTIFICATION

A. The Contractor shall furnish a master grade certificate bearing the certification mark of the Tile Council of America, signed by the manufacturer of the tile and the tile applicator. Certificates shall state the type and quality of the material furnished.

1.9 MAINTENANCE INSTRUCTIONS

A. Furnish in triplicate (3) copies of instructions for the care, cleaning, and maintenance of ceramic tile.

1.10 EXTRA TILE

A. Upon completion of work, deliver to Owner, tile of same size, color, pattern and type as used on the project for use in future repair and maintenance work.

1. 2% if resultant quantity exceeds 5 sq. ft.

2. Minimum, 5 sq. ft.

2. Include each trim shape, inside/outside corners, and any other special pieces in quantities in keeping with the conditions encountered.

3. Clearly mark extra stock to identify:
    a. Manufacturer’s name
    b. Product name
    c. Product color and pattern

B. Provide extra tile in above noted quantities for each color, tile, pattern and type employed on project.

C. Package tile products neatly in original containers, to prevent damage.

1.11 JOB CONDITIONS

A. Environmental:

1. Maintain temperature no lower than 50 degrees F and no higher than 100 degrees F during tile work and for seven (7) days after completion.

2. Vent temporary heaters to outside to avoid carbon dioxide damage to new tile work.

3. Provide adequate lighting for good grouting and clean up.

B. Protection: Protect adjoining work surfaces before tile work begins.

2.0 PRODUCTS

2.1 KINDS OF TILE

A. All tile shall be of domestic manufacture, standard grade, meeting the requirements of recommended standard Specification for Ceramic Tile TCA 137.1-1980. All packages shall bear quality triangle of Tile Council of America, Inc.

B. All porcelain and slate as specified in Finish Schedule by Architect. Edges shall be plain or cushion as selected.

C. All base shall be coved and match floor tile.

D. Include all special shapes required such as bullnose, cove, trim, caps, etc. These shall be of the same kind and finish as adjacent tile.

2.2 COLOR, PATTERNS, SIZES OF TILE AND GROUT SELECTIONS

1. All colors of tile shall be as selected by the Architect from manufacturer's standard colors and listed as follows in schedule. Refer to finish plans for location.

2. TILES:
** See A-600's for all specified product information and coordinating base material.*

2.3 TERMINAL EDGES AND WATERPROOFING

A. Furnish and install bullnose tiles at terminal edges of porcelain tile (tile base and wall tile wainscot)

B. If bullnose is unavailable use Schluter Systems, Inc. L-Channel Top cap. Color and finish to be selected by architect.

C. Tile Edge Protection: Provide appropriate Schluter Systems, Inc. edge protection to transition between floor types when applicable. Submit samples for approval by Architect.

D. Tile Expansion and Control Joints: Provide appropriate Schulter Systems, Inc., tile expansion and control joint profile when applicable. Submit samples for approval by Architect.

E. Waterproofing Membrane System: Provide Schluter Systems, Inc or approved equal waterproof membrane in shower areas or other wet locations. Install per manufacturer's recommended instructions.

F. Waterproofing & Crack Isolation Membrane: Provide Flextile Ltd, WP-980 waterproof membrane system in areas where large expanses of tile are installed. Install per manufacturer's recommended instructions.

2.4 MORTAR AND GROUTING MATERIALS

A. All cement shall be Portland Cement conforming to ASTM Specifications C150, latest edition, type 1.

B. All hydrated lime shall comply with ASTM Specifications C206 and C207, type S.

C. All sand shall be clean, sharp, durable, fine natural aggregate, free from salt, loam, clay, soluble salts organic impurities, conforming to ASTM C144.

1. Sand for floor setting beds shall be well graded, passing #8 sieve, not over 5% passing #100 mesh screen.
2. Sand for grout shall pass #30 mesh sieve, not over 5% passing #100 mesh screen.

D. Water shall be clean, free from injurious amount of oil, acid, soluble salts, organic impurities.

E. Dry-set mortar - conform with ANSI A118.1, and be prepared under Tile Council Formula. Package shall bear quality triangle of Tile Council of American, Inc.

F. Latex-Portland Cement Mortars to conform to ANSI A118.4.

G. Organic adhesives to conform to ANSI A136.1.

H. Epoxies:

1. Floor and wall adhesive: Equivalent to Mapei Corp. Kerapoxy adhesive.

2. Heavy duty floor mortar:
   a. Equivalent to Mapei Corp. Kerapoxy epoxy mortar.
   b. Conform to ANSI A118.3

I. All materials shall be measured accurately by volume thoroughly mixed and placed within a reasonable time after mixing. Do not re-temper.

3.0 EXECUTION

3.1 EXAMINATION

A. Verify existing condition are ready to receive work.

B. Ensure substrates are clean, dimensionally stable, cured and free of contamination such as oil, sealers and curing compounds.

C. Ensure concrete has been allowed to cure for a minimum of 28 days.

D. Ensure that floor substrate is trowelled to a fine broom finish.

E. Notify Architect in writing of unacceptable substrate conditions.

3.1 SETTING METHODS

A. All ceramic tile installation work shall be in accordance with latest recommendations of the Tile Council of America, Inc. and as indicated on drawings and specified herein. In case of confliction, the more stringent shall apply.

B. Porcelain tile floors and walls shall be applied direct, using dry set mortar (thin set method).

C. Average thickness of thin set mortar bed shall be 1/8" and shall not exceed 1/4".

D. Coordinate with concrete work for recess at area of tile.

E. Providing waterproofing membrane at all shower walls.

F. Verify size and field dimensions for Entry Mat at Vestibules

3.2 STANDARD FOR TILE WORK

A. Except as otherwise specified, all details of tile setting and workmanship shall conform with the requirements of the "2003-2004 Handbook for Ceramic Tile Installation" of the Tile Council of America, Inc.

3.3 TILE SETTING PROCEDURE

A. A detailed inspection of all surfaces on which tile is to be placed shall be made. A report, in writing, of any defects found as a result of this inspection, shall be made to the Contractor, who shall immediately remedy such defects before the placing of the tile.

B. All rooms or spaces in which tile floors are being laid, shall be closed to traffic or other work, and kept closed until the floors are completed and the tile firmly set.

C. No tile shall be set on surfaces where other work is specified or shown to be embedded in the tile work until such work has been installed and approved.

D. Tile work shall be laid out so as to avoid small cuts. All cuts shall be rubbed smooth and even.

E. Replace All tile misfits with properly cut tile.

F. No tile shall be placed or allowed to set in temperatures below 40 degrees F.

3.4 SETTING TILE

A. Installation of the tile shall comply with standards previously specified and with ANSI 108.5.

B. Clean surface of all dust, deleterious film and non-compatible matter, moisten well with water, allow no free water to remain on surface. Do not saturate.

C. Spread specified setting mortar, screen to true plane at proper height, sloped to drains or level as indicated.

D. Do not spread more setting mortar at one time than can be covered during same working period.

E. Lay all tiles to straight edge, maintain uniform joint between tiles. All joints shall align in all directions.

F. Press tile into still plastic mortar and beat to true surface, using approved tools.

G. Provide expansion joints in locations and as required by recommendations of Tile Council of

America, Inc.

3.5 GROUTING

A. After removal of paper, grout all tile joints. Fill be screening or brushing specified grout until joints are full, avoiding air traps or voids.

B. Pre-seal tiles requiring protection form grout staining.

C. Tool all cushion edge joints to depth of cushion.

D. Remove all surplus grout from tile, using diagonal strokes across joints. Check for gaps or air holes, filling same.

3.6 PROTECTION

A. Immediately after initial set of grout, apply a coat of non-corrosive soap to all wall tile or cover it completely with heavy gauge plastic sheets, properly secured and joints well taped.

B. Cover all tile floors with building paper with taped joints. Where necessary to truck over tile floors, General Contractor shall provide planking.

C. Close all rooms to traffic for ten (10) days after grouting tile.

D. Protect all finished work until the Architect authorizes the removal of protection.

3.7 CLEANING

A. After grout has set, wash and rinse all tile work with sponge and clean water. Polish with dry cloth.

B. Avoid the use of acid if possible. If absolutely necessary, obtain approval of Architect and use 10% muriatic solution and rinse thoroughly with clean water.

C. All cleaning shall be done in such a manner as not to adversely affect mortar joints and finish of tile.

3.8 REPAIR AND REPLACEMENT

A. Remove all broken tiles and replace with new tile. Provide adequate “back up” in base coat to prevent further cracking tile. Provide protection to replaced floor tile as specified.

END OF SECTION

SECTION 09510 - ACOUSTICAL TREATMENT

1.0 GENERAL

The drawings, Instructions to Bidders, Form of Proposal, General Conditions, Supplementary General Conditions and Division 1 are included herein and govern work under this section.

1.1 DESCRIPTION OF WORK

A. Extent of each type of acoustical ceiling is shown and scheduled on drawings.

1. Refer to Room Finish Schedule, reflected ceiling plans and other pertinent details as indicated on drawings.

B. Types of acoustical ceilings specified in this section include the following:

1. 2' X 2' Acoustical panel ceilings, exposed suspension.
2. 2’ x 4’ Acoustical panel ceilings, exposed suspension.
3. Suspension Trim System for suspended ceiling system.

1.2 SEISMIC REQUIREMENTS

A. Suspended ceiling grid systems shall provide all necessary components to comply with the New York State Seismic Design Criteria as dictated by the specific Seismic Design Category. This requirement includes suspension of all HVAC, lighting and any other ceiling installed items

1.3 QUALITY ASSURANCE

A. Installer: Firm with not less than three years of successful experience in installation of acoustical ceilings similar to requirements for this project and which is acceptable to manufacturer of acoustical units, as shown by current written statement from manufacturer.

B. All acoustical tile panels specified herein, shall have a flame spread rating of 25 or less when tested by an independent Testing Laboratory in accordance with ASTM E84-70.

C. Manufacturer shall submit substantiating data as evidence of compliance.

D. Changes from system: system performance following any substitution of materials or change in assembly design must be certified by the manufacturer.

1.4 SUBMITTALS

A. Product Data: Manufacturer's product specifications and installation instructions for each acoustical ceiling material required, and for each suspension system, including certified laboratory test reports and other data as required to show compliance with these specifications. Include manufacturer's recommendations for cleaning and refinishing acoustical units, including precautions against materials and methods which may be detrimental to finishes and acoustical performances.

B. Shop drawings:

1. Reflected ceiling plans: Indicate layout arrangement of ceiling design, dimensions, and locations of related integrated lighting and air distribution.

C. Samples: Set of 12" square samples for each acoustical unit required showing full range of exposed color and texture to be expected in completed work. Set of 12" long samples of each exposed runner and molding.

D. Maintenance Stock: At time of completing installation, deliver stock of maintenance material to Owner. Furnish full size units matching units installed, packaged with protective covering for storage, and identified with appropriate labels. Furnish amount equal to 2.0% of acoustical units and exposed suspension installed.

1.5 DELIVERY, STORAGE AND HANDLING

A. Delivery of materials: Deliver materials in original, unopened packages clearly labeled with the manufacturer's name and identification numbers.

B. Inspection: Promptly inspect delivered materials, file freight claims for damage during shipment, and order replacement materials, as required.

C. Storage: Store in manner that will prevent warpage, scratches, or damage of any kind.

D. Handling: Handle in such a manner as to ensure against racking, distortion, or physical damage of any kind.

1.6 JOB CONDITIONS

Recommendations of the Acoustical Materials Association in their latest bulletin shall apply. Acoustical materials shall be installed under temperature and humidity conditions closely approximating those which will exist when the building is occupied. They should not be installed when buildings are damp and cold or dry and hot. Plastering, concrete and flooring shall be completed and then allowed to dry before the installation of acoustical tiles. All windows and doors shall be in place and glazed. Heating system should be installed and operating where necessary to maintain proper conditions before, during and after the acoustical ceiling installation. Concrete should be thoroughly dry.

2.0 PRODUCTS

2.1 CEILING UNITS

(ACT-1)

Manufacturer:	Armstrong
Style:	#1920
Color:	White
Size:	24” x 24”
Edge:	Beveled Vector Tile
Texture:	Very Fine
Fire Rating:	Class A

(ACT-2)

Manufacturer:	Armstrong
Style:	Cortega
Style Number:	#769
Size:	24” x 48”
Edge:	Square Lay-In
Color:	White
Fire Rating:	Class A

2.2 CEILING SUSPENSION MATERIALS

A. Exposed Tee Suspension System

1. System shall include all hangers, wire, carrying tees, cross tees, edge angles, clips and all other components to complete installation. Provide proper amount and proper type of "hold down" clips as required to prevent "uplift" and "shifting" of tiles.

2. Suspension system for type A ceiling tile shall be as manufactured by Armstrong or equal as follows:
   a. ACT-1: Grid to be Prelude XL 15/16" D x 24” x 24”, Color: Flat White
   b. ACT-2: Grid to be 15/16” D x 24” x 48” Color: Flat White

3. All lights in exposed grid suspension system shall be supported by the suspension system. Diffusers, grilles, etc. shall be independently supported.

4. Main tees shall be sufficiently supported to carry load imposed, which shall include weight of lights. A minimum of four hangers per light shall be used and for lights over 4'-0" long, and additional two hangers for each additional 2'-0" of length shall be used.

5. Main tees and cross tees shall be made of fully zinc coated steel of gauges as previously noted. All connections of main tees, cross tee, perimeter mouldings, etc., shall be mechanically interlocked. All work shall be level, square and at proper height. Provide perimeter mouldings where ceiling abuts walls or partitions.

6. Hanger wire shall be No. 12 annealed galvanized wire, spaced not to exceed 4" o.c.

7. All ceiling suspension shall be supported from floor and roof construction above. Provide all supplementary framing as required to adequately support the suspended ceiling.

B. Suspension Trim system

1. Manufacturer: Armstrong
   Product: Axiom- Classic
   Sizes: See A-601 & A-602 for sizes.
   Color: White

2. Provide trim pans, splice plates, mounting clips and all other fasteners recommended by the manufacturer for installation.

3. Install suspension system in accordance with manufacturer's recommended requirements.

3.0 EXECUTION

3.1 INSPECTION

Installer must examine conditions under which acoustical ceiling work is to be performed and must notify Contractor in writing of unsatisfactory conditions. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.2 PREPARATION

A. Coordination: Furnish layouts for inserts, clips, or other supports required to be installed by other trades for support of acoustical ceilings.

B. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half width units at borders, and comply with reflected ceiling plans wherever possible.

C. Field verify dimensions prior to installation.

3.3 INSTALLATION

A. General: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire resistance rating requirements as indicated, and industry standards applicable to work.

B. Installation - Lay-In Type

1. Attach to carrying channels, at right angles, the tee bars or exposed grid at spacing determined by the tile size. Provide additional support to exposed grid carrying tees at recessed lights. (light to bear on tees). Ceiling diffusers to be supported independently by Heating Contractor. Provide tee bar splices as required.

2. Ceiling contractor to coordinate his work with that of electrical and heating contractors to insure satisfactory installation of lights, diffusers and ceiling and with metal deck installer to assure proper placement of strap hangers. Frame around ceiling diffusers to support ceiling tile as required.

3. Furnish and install all accessories and items necessary for proper suspension.

4. Acoustical ceiling tile shall be placed in an approved manner as recommended by the manufacturer.

5. Lay out work to avoid small pieces at room perimeters. All damaged ceiling tile shall be replaced before final acceptance of structure and all acoustical installations shall be made by an acoustical contractor approved by the manufacturer of the acoustical materials as being thoroughly experienced in erection of acoustical materials.

6. Anchorage and fastenings shall be secure and adequate for the use intended.

7. Acoustical ceilings shall be erected in a rigid and secure manner, level with tight joints, free from wave, buckles and sags. All acoustical tile shall be properly supported.

8. Cut and fit all acoustical units neatly and accurately against beams and walls and around pipes, electrical outlets and equipment so that flanges will cover units where cut.

9. All joints shall be kept in proper alignment and parallel to walls, unless otherwise indicated.

10. All finished ceiling areas shall be flat with not tile or edges of the tile protruding or recessed in relation to adjacent tile.

11. Metal edge channels, fillers, mouldings, etc., shall be in as long pieces as possible and joints shall be neatly and as inconspicuously as possible. Trim shall be attached with approved concealed fastenings. All angles, corners and filler shall have mitered joints.

12. Insert for support of suspended ceilings from slab above and for attachment of suspension wire shall be of type recommended by manufacturer and shall be of a type to support ceiling loads imposed.

3.4 ADJUST AND CLEAN

A. Replace damaged and broken panels.

B. Upon completion, all exposed surfaces of factory finished acoustical work shall be cleaned and left in a condition entirely satisfactory to the Architect. Remove all debris, equipment and material from premises.

END OF SECTION

SECTION 09650 –RESILIENT FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.2 DESCRIPTION OF WORK:

A. Extent of, vinyl composition tile flooring is indicated on drawings, schedules and in provisions of this section.

1.3 RELATED WORK:

A. Cast-In-Place Concrete as specified in Division 3.
B. Ceramic Tile is specified in another Division 9 section.
C. Carpet as specified in Division 9

1.4 QUALITY ASSURANCE:

A. All resilient flooring covered by this specification shall establish minimum standards for materials, finish, construction, design, function, and workmanship.

B. Installer Qualifications:

1. Minimum 3 years experience installing resilient floor covering materials.

2. Demonstrated quality of workmanship:

a. Minimum number of installations - 5.
b. Age of installations: Maximum - 3 yrs.; minimum - 1 yr.

1.5 SUBMITTALS:

A. Samples:

1. Submit minimum of 3 samples of each type and color or pattern of resilient flooring and base materials as follows:
a. Vinyl tile: 3” x 3”
b. Vinyl plank flooring: 4”x3”

2. Mark samples with name of Contractor, project identification, and area where materials are to be used.

B. Maintenance Data and Instructions: Upon completion and prior to acceptance of work, furnish three (3) copies of a list of recommended maintenance products and recommended maintenance methods and procedures for each product specified.

C. Maintenance Materials:

1. Furnish additional floor covering materials for replacement and maintenance.

2. Furnish materials of each size, color, pattern, and type of material included in work.

   a. Vinyl Tile: 5% overage.

   b. Plank vinyl: 5% overage

3. Furnish Owner with manufacturer's maintenance and warranty information.

1.6 PRODUCT DELIVERY AND STORAGE:

A. Deliver materials to project site in manufacturer's original, unopened containers with labels indicating brand names, colors and patterns, and quality designations legible and intact.

B. Do not open containers or remove markings until materials are inspected and accepted.

C. Store and protect accepted materials in accordance with manufacturer's directions and recommendations.

D. Unless otherwise directed or recommended by manufacturer, store materials in original containers at not less than 70° F (21° C) for not less than 24 hours immediately before installation.

1.7 ENVIRONMENTAL REQUIREMENTS:

A. Maintain a minimum temperature of 65° F in space to receive flooring and accessories for at least 48 hours before, during, and for not less than 48 hours after, installation.

B. Maintain minimum temperature of 55° F after flooring is installed except as specified in Paragraph 1.7 A.

C. Ventilation:

1. Provide ventilation during and following adhesives applications.

2. Use temporary air circulators in enclosed areas lacking natural ventilation.

1.8 WARRANTY

A. Vinyl composition tile and vinyl plank flooring: 10 year limited warranty

PART 2 - PRODUCTS

2.1 MANUFACTURER: Products of the following manufacturers, subject to compliance with requirements, will be acceptable:
** See A-600's for all specified product information and coordinating base material.*

A. Refer to finish schedule for exact products, styles, colors, and sizes.

B. Architect to select from manufacturer's full line of styles and colors.

2.2 FLOOR COVERING MATERIALS:

A. General:

1. Uniform in thickness and size.

2. Edges cut accurately and square.

3. Uniform color with variations in variegated patterns kept to a minimum.

4. Colors and/or patterns selected by Architect from manufacturer's standard.

B. Vinyl Tile

1. 12”x18”x 0.096” thick, see A-600’s for exact product

2. Fire hazard Classification:
   A. ASTM E648, Critical Radiant Flux: Class 1
   B. Smoke Denisty (ASTM E662) – Less than 450
   C. ASTM 970 Static Load Limit 1,000 PSI

C. Vinyl Plank:

1. 7”w x 48”l x 0.098” thick, see A-600’s for exact product

2. Characteristics:

   a. ASTM E648, Critical Radiant Flux: Class I
   b. ASTM E662, Smoke Density: <450
   c. ASTM F970, Static Load Limit: 1500psi

2.3 BASE MATERIALS:

A. General:

1. Uniform in thickness.
2. As long lengths as practicable to suit conditions of installation.
3. Colors as selected by Architect from manufacturer's full range of styles and colors.

B. Rubber Base:

1. Cove base: 4 or 6 inch high, or height to match existing, 1/8 inch thickness, with 5/8 inch standard toe base.

2. Toeless flat base (at carpeted areas): 4 or 6 inch high, or height to match existing, 1/8 inch thickness, with no-toe base.

3. Factory premolded inside and outside corners: Match base materials.

4. Equivalent to extruded ASTM F-1861 - Type TP, thermoplastic rubber base.

5. Fire Hazard Classification:

   a. Smoke developed (ASTM E-662): 450 or less.
   b. Critical radiant flux (ASTM E-648): 0.45 watts/sq. cm. or more, Class I.

2.5 APPLICATION MATERIALS:

A. Adhesive: Provide waterproof type and brands of adhesive as recommended by manufacturer of covering materials for conditions of installation.

B. Cleaner: As recommended by floor covering manufacturer for particular type of flooring material.

2.6 FLOOR PATCH AND LEVELING MATERIALS:

A. Floor Patch: Equivalent to Armstrong S-175 floor patch.

B. Fill and Leveling: Equivalent to Armstrong S-180 latex underlayment, Ardex V-800.

C. Liquid Underlayment: Equivalent to Crossfield Products Corp., A-81 underlayment. Use where fill or leveling exceeds more than 1/8 inch.

PART 3 - EXECUTION

3.1 INSPECTION OF SURFACES:

A. Examine substrate for excessive moisture content and unevenness which would prevent execution and quality of resilient flooring as specified. Notify Architect in writing of any defect in subfloor.

B. Do not proceed with installation of flooring until defects have been corrected except where correction is indicated under "Preparation" in this section.

3.2 PREPARATION:

A. Remove dirt, oil, grease, or other foreign matter from surfaces to receive floor covering materials.

B. Fill cracks, as required, in subfloor with approved nonshrinking crack filler.

C. Fill subfloor cracks, etc. Clean subfloor of grease or other dirt. Do not begin until work of other trades, including painting, has been completed.

D. Subfloors must be dry, smooth and free of dust, solvents, paint, wax, grease, oil, asphalt sealing compounds and other extraneous materials. The surface must be hard and dense, and free from powder and flaking.

E. New concrete slabs must be thoroughly dry (at least 6 weeks) and completely cured. Check moisture content before installing material.

F. Construction contractor: Maintain rooms and subfloors at 70 degrees F. minimum for at least 48 hours before, during, and 48 hours after flooring operations.

G. Use only experienced workmen. Lay tiles with even joints and with finished surfaces in true plane, smooth. Lay tiles square and symmetrical with room axis. Cut, fit, scribe to wall.

H. Install protective edgings where flooring edges are exposed and where required to saddle difference of finished floor elevation between ceramic tile and resilient tile.

I. Cement base firmly to walls using proper adhesive for surface to which it is to be applied. Scribe base accurately to trim.

J. The floor shall be installed using manufacturers' recommended adhesives and in strict compliance with written installation specification.

3.3 APPLICATION OF ADHESIVES:

A. Mix and apply adhesives in accordance with manufacturer's instructions. Provide manufacturer's recommended adhesive for each flooring material specified.

B. Provide safety precautions during mixing and applications as recommended by adhesive manufacturer.

C. Apply uniformly over surfaces.

1. Cover only that amount of area which can be covered by flooring material within recommended working time of adhesive.

2. Remove any adhesive which dries or films over.

3. Do not soil walls, bases, or adjacent areas with adhesives.

4. Promptly remove any spillage.

5. Use waterproof adhesive at all areas.

D. Apply adhesives with notched trowel or other suitable tool.

E. Clean trowel and rework notches as necessary to insure proper application of adhesive.

F. Seam and seal sheet vinyl per manufacturer's recommended instructions.

3.4 INSTALLATION OF TILE AND RUBBER BASE:
** Install each flooring material specified as recommended by the flooring manufacturer.*

A. Lay tile in center of space.

B. Work toward perimeter.

C. Do not lay tile less than 1/2 width of field tile except where accepted by Architect for irregularly shaped rooms or spaces.

D. Cut border tile neatly and accurately to fit within 1/64 inch of abutting surfaces.

B. Fit flooring material neatly and tightly into breaks and recesses, against bases, around pipes and penetrations, under saddles or thresholds, and around permanent cabinets and equipment.

F. Lay tile parallel to room axis in straight courses with cross joints as directed; lay tile with grain or pattern running in direction between adjacent tile as directed.

G. Roll tile thoroughly in both directions with a 100-lb. or heavier roller.

H. Tile Reducers and Feature Strips: Install tile reducers or feature strips at all doorways or in areas where tile meets dissimilar materials. Set tile reducers or feature strips in mastic recommended by manufacturer with top of edging flush with top of tile.

I. Provide patterns in arrangements as determined by Architect.

3.5 INSTALLATION OF BASE:

A. General:

1. Install base around perimeter of rooms or space where scheduled or indicated on drawings.

2. Include furnishing and installing rubber base on exposed sub-base surfaces of cabinets and/or casework installed as part of work on project.

3. Match edges at all seams.

4. Install with tight butt joints with no joint widths greater than 1/64 inch.

B. Top-Set Base:

1. Apply adhesive and firmly adhere to wall surfaces.
2. Press down so that bottom cove edge follows floor profile.
3. Form internal corners by using premolded corners.
4. Form external corners by using premolded corners.
5. Scribe base accurately to abutting materials.
6. Provide flat toeless base where carpeting is scheduled.

3.6 FINISHING AND CLEANING:

A. Upon completion of installation of floor covering, adjacent work, and after materials have set, clean surfaces with a neutral cleaner as recommended by manufacturer for type of floor covering material installed.

B. Leave surfaces clean, ready to receive wax application by Owner.

C. Protect completed work from traffic and damage until acceptance by Owner.

END OF SECTION

SECTION 09900 - PAINTING

1.0 GENERAL

The drawings, Instructions to Bidders, Form of Proposal, General Conditions, Supplementary General Conditions and Division 1 are included herein and govern work under this section.

1.1 DESCRIPTION OF WORK

A. Extent of painting work is shown on drawings and schedules, and as herein specified.

B. The work includes painting and finishing of interior exposed items and surfaces throughout the project, except as otherwise indicated.

1. Exposed exterior items and surfaces.
2. Exposed interior items and surfaces.
3. Surface preparation, priming and finish coats of paint specified in this Section are in addition to shop-priming and surface treatment specified under other sections of work.

C. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

D. Paint exposed surfaces whether or not colors are designated in "schedules", except where natural finish of material is specifically mentioned, paint same as adjacent similar materials or areas. If color or finish is not designated, Architect will select these from colors available for materials systems specified.

1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and ironwork, and primed metal surfaces of mechanical and electrical equipment.

E. Paint in accordance with Room Finish Schedule, all drywall, wood trim and base.

F. Paint all exposed surfaces that are shop or job primed under other sections of the specifications. Touch-up all primed surfaces where prime coat has been marred or damaged.

G. Finish all architectural woodwork, millwork, including counters, and all other millwork items that cannot be completely prefinished at the factory.

H. Paint all hollow metal doors, frames, and other hollow metal work of a ferrous material.

I. Back prime all wood trim.

1.2 FOLLOWING CATEGORIES OF WORK ARE NOT INCLUDED AS PART OF FIELD-APPLIED FINISH WORK, OR ARE INCLUDED IN OTHER SECTIONS OF THE SPECIFICATIONS.

A. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under various sections for structural steel, miscellaneous metal, hollow metal work, and similar items. Also, for fabricated components such as architectural work, and similar items. Also, for fabricated or factory-built mechanical and electrical equipment or accessories.

B. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer finishing is specified for such items as (but not limited to) architectural woodwork and casework, finished mechanical and electrical equipment, including light fixtures, distribution cabinets, doors, and equipment.

C. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas.

D. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze, and similar finished materials will not require finish painting, unless otherwise indicated.

E. Operating Parts and Labels: Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting, unless otherwise indicated.

F. Do not paint over any code-required labels, such as underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plates.

1.3 RELATED WORK

A. Shop Painting:

1. Structural_Steel as specified in Division 5.
2. Steel_Joists as specified in Division 5.
3. Metal_Fabrications as specified in Division 5.
4. Hollow_Metal_Doors as specified in Division 8.
5. Hollow_Metal_Frames as specified in Division 8.
6. Hydraulic_Passenger_Elevator as specified in Division 14.

B. Sealants and Caulking as specified in Division 7.

C. Wood Doors as specified in Division 8.

D. Factory prefinished items as specified.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.

B. Samples: Submit samples for Consulting Officer's review of color and texture only. Provide a listing of material and application for each coat of each finished sample.

1. Gypsum Wall board: Provide a12" x 12" hardboard, provide two samples of each color and materials, with texture to simulate actual conditions. Resubmit samples as requested by the Architect until acceptable sheen, color, and texture is achieved.

2. Natural and Stained Wood: Provide actual wood surfaces, provide two 4" x 8" samples of natural and stained wood finish. Label and identify each as to location and application.

3. Multi-Color Coatings – Provide two (2) samples of each color (5” x 8”), submit a sprayout with each batch of finish coat to match approved samples.

4. Concrete Masonry: Provide two 4” x 8” samples of masonry, with mortar joint in the center, for each finish and color.

5. Ferrous metal: Provide two 4” square samples of flat metal and two 8” long samples of solid metal for each color and finish.

1.5 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to that indicated for the Project with a record of successful in-service performance.

B. Source Limitations: Obtain block fillers, primers, and undercoat materials for each coating from the same manufacturer as the finish colors.

C. Benchmark Samples (Mockups): Provide a full-coat benchmark finish sample of each type of coating and substrate required on the Project. Comply with procedures specified in PDCA P5. duplicate finish of approved prepared samples.

1. The Architect will select on room pf surface to represent surfaces and conditions for each type of coating and substrate to be painted.

a. Wall Surfaces: provide samples pm at east 100sf. of wall surface.

b. Small Areas and Items: the Architect will designate and item or area

as required.

2. After permanent lighting and other environmental services have been activated, apply coatings in this room or to each surface according to the Schedule or as specified. Provide required sheen, color, and texture on each surface.

   a. After finishes are accepted, the Architect will use the room or surface to evaluate coating systems of a similar nature.

1.6 DELIVERY AND STORAGE

A. Deliver materials to job site in original, new and unopened packages and containers, bearing manufacturer's name and label, and following information:

1 Name or title of material
2. Manufacturer's stock number and date of manufacturer
3. Manufacturer's name
4. Contents of volume, for major pigment and vehicle constituents.
5. Thinning instructions
6. Application instructions
7. Color name and number

B. Storage of materials: Store and mix all materials only in such rooms as may be assigned for this purpose. Take all necessary precautions in storage of painting materials and implements to prevent fire.

1. Provide galvanized iron pans of suitable size in which all mixing pails must be placed. No mixing shall be done outside of these pans. Pay for repairs for all damage caused be mixing or spillage.
2. Remove all oily rags and waste each night after being placed in a covered metal receptacle during the day.

1.7 JOB CONDITIONS

A. Before commencing painting, make certain that surfaces to be coated are in perfect condition to receive the coating by being clean, dry, smooth, and at the proper temperature. No materials shall be applied if and when unfavorable atmospheric conditions prevail which could adversely affect the drying, appearance, color, or adhesion of the materials. If surface, atmospheric, or other conditions to be improper for paint or finishing are found,report such conditions to the Architect at once and do not proceed until the situation is corrected. Commencement of work in any given areas shall be construed to mean acceptance of such areas by the Contractor.

B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F (7 degrees C) and 95 degrees F (35

degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

C. Do not apply paint in snow, rain, fog or mist; or when relative humidity exceeds 85%; or damp or wet surfaces; unless otherwise permitted by paint manufacturer's printed instructions.

D. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

E. Material List and Maintenance Instructions: Furnish triplicate (3) copies of a complete list of materials being used, including type, brand and color used for painting and finishing each room and portion of building, interior and exterior. Include instructions for proper maintenance.

1.8 EXTRA MATERIALS

A. furnish extra paint materials from the same production run as the materials applied in the quantities described below. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.

1. Quantity: Furnish the Owner with extra paint materials in the quantities indicated below:
   a. 2 gal. of each type and color applied.

2. Quantity: Furnish the Owner with an additional 5 percent, but not less than 1 gal. or 1 case, as appropriate, of each material and color applied.

2.0 PRODUCTS

2.1 COLORS AND FINISHES

A. Prior to beginning work, Architect will select colors for surfaces to be painted.

1. Use representative colors when preparing samples for review.
2. Final acceptance of colors will be from samples applied on the job.

B. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

1. Lead content in pigment, if any, is limited to contain not more than 0.5% lead, as lead metal based on the total non-volatile (dry-film) of paint by weight.

C. Paint Coordination: provide finish coats which are compatible with prime paints used. Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and reprime as required. Notify Architect in writing of any anticipated problems using

specified coating systems with substrates primed by others.

2.2 MATERIAL QUALITY

A. Provide best quality grade of various types of coating as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

2.3 MANUFACTURERS

A. Use the same brand of each respective material throughout the job.

B. Primers and undercoats shall be those made by manufacturers of respective finish coats.

C. The following manufacturer's first line products are approved for use on this project:

1. Benjamin Moore
2. PPG Paints

D. Galvanized surface pre-treatment shall be manufactured by American Chemical Paint Company of Nielson Chemical Company.

2.4 STANDARD MATERIALS

A. Comply with requirements of latest editions of these standard specifications for the following materials, whether used directly or as ingredients of factory prepared products:

1. Raw Linseed Oil - ASTM A-234
2. Boiled Linseed Oil - ASTM D-260
3. Liquid Drier - Federal Spec. TT-D-651
4. White Shellac - Federal Spec. TT-V-91a
5. Turpentine - ASTM D-13
2. Mineral Spirits - ASTM D-235
3. Interior Wood Filler - Federal Spec. TT-F-336
4. Pigments-in-Oil - Federal Spec. FF-P-381

2.5 PAINTING MATERIALS

A. All basic materials entering into the compounding and manufacture of paints and other finishing materials specified, shall be of the best quality products of recognized manufacturers, subject to approval of the Architect. Reference to ASTM or Federal Specifications ID for the purpose of establishing a testing basis for requirements of quality.

B. Coloring materials shall be pure tint colors, and of the highest grade of tinting strength and fineness obtainable. Coloring materials shall be composed of ingredients that will mix with the various coatings specified without impairing the ultimate result for which coatings are selected.

C. All materials shall be delivered in original unopened containers, each container bearing the brand and maker's name, completely identifying the contents, including formula, and given directions for its proper use.

D. All materials shall be used without thinning, unless otherwise specified or approved by the Architect. If any material is thus thinned, use only the thinner recommended by paint manufacturer.

2.6 TYPES OF FINISHES

Provide the following systems for various substrates, as indicated. Unless otherwise noted, all materials specified are the products of Benjamin Moore. The specifying of the products of one manufacturer is intended to indicate the type of product desired and equivalent products of approved manufacturers such as Sherwin Williams will be accepted, subject to conformance with specifications.

A. Gypsum Drywall Systems

1. Interior Drywall Walls
   a. Primer - Sherwin Williams Prep Right Primer B28W200
   b. 2nd Coat – Sherwin Williams Promar 200 Latex EggshellB20W400 Series
      3rd Coat – Sherwin Williams Promar 200 Latex Eggshell B20W400 Series

      OR

      2 nd Coat – Sherwin Williams Promar 200 Semi-Gloss B31W400 Series
   d. 3 rd Coat – Sherwin Williams Promar 200 Semi-Gloss B31W400 Series
      NOTE: See Finish Schedule

2. Drywall Ceilings
   a. Primer – Sherwin Williams Prep Right Primer B28W200
   b. 2nd Coat– Sherwin Williams Latex Flat Ceiling White
   c. 3rd Coat – Sherwin Williams Latex Flat Ceiling White

B. Paint **all** metal primed and unprimed surfaces as follows:

   Metal Doors and Frames and Other Factory Primed Metal Work
   a. 1st Coat - oil primer undercoat
   b. 2nd Coat – Sherwin Williams Promar 200 semi-gloss latex.
   c. 3rd Coat – Sherwin Williams Promar 200 semi-gloss latex.
   Color to be selected by Architect. See written finish schedule.

C. Natural Finish Woodwork & Stained Wood

   a. Patch, sand and prepare wood for wood stain
   b. One (1) coat polyurethane gloss (Match satin sample)
   c. Two (2) coats polyurethane satin.
   d. See Finish Schedule &/or drawings for locations.

D. Interior wood (Painted)

a. One (1) coat wall and wood primer
b. 1st coat Promar 200 semi-gloss.
c. 2nd coat Promar 200 semi-gloss.
See Finish Schedule &/or drawings for locations.

E. Interior Concrete Block Walls

a. Primer - Interior Exterior Block Filler B25W25
b. 2nd Coat - Promar 200 Latex Eggshell B20W401
c. 3rd Coat - Promar 200 Latex Eggshell B20W401

3.0 EXECUTION

3.1 INSPECTION

A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.

B. Starting of paint work will the construed as Applicator's acceptance of surfaces and conditions within any particular area.

C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

3.2 SURFACE PREPARATION

A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

Remove hardware, hardware accessories, machine surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of paint of each space or area, reinstall removed items.

Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so the contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

Remove all blistered and loose paint

B. Cementitious materials: Prepare cement plaster to be painted be removing efflorescence, chalk, dust, dirt, grease, oils and by roughening as required to remove glaze.

C. Wood: Clean wood surfaces to be painted of dirt, oil or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finish surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.

Prime, stain, or seal wood required to be job-painted immediately upon delivery to job. Prime edges, ends, faces, undersides and backsides of wood, including cabinets, counters, cases, paneling.

When transparent finish is required, use spar varnish for backpriming.

D. Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

Touch up shop-applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch up with same type shop primer.

E. Galvanized Surfaces: Clean free of oil and surface contaminants with nonpetroleum based solvent.

3.3 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with manufacturer's directions.

B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing, and application of paint in a clean condition, free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

D. Use only thinners approved by paint manufacturer and only within recommended limits.

3.4 APPLICATION

A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

Apply additional coats when undercoats, strains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a

dry film thickness equivalent to that of flat surfaces.

Paint colors, surface treatments, and finishes indicated in the schedules.

Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formations of a durable paint film.

Provide finish coats that are compatible with primers used.

The term “exposed surfaces” includes areas visible when permanent or built-in fixtures, convector covers, covers for finned- tube radiation, grilles, and simiar components are place. Extend coatings in these areas, as required, tomaintain the system integrity and provide desired protection.

Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only before final installation of equipment.

Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.

Paint back sides of access panels and removable or hinged covers to match exposed surfaces.

Finish exterior and interior doors on tops, bottoms and side edges same as exterior or interior faces, unless otherwise indicated.

B. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for paint as soon as practicable after preparation and before subsequent surface deterioration.

Allow sufficient time between successive coatings to permit proper drying. Do no recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

C. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.

D. All Masonite/ MDF doors must be delivered primed on all edges and also must be painted on all sides and edges. Wherever a door is cut or planed, the surfaces affected must be immediately primed with a primer sealer.

E. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer’s written instructions.

a. Brushes: Use brushes best suited of the type of material applied. Use brush of appropriate size for the surface or item painted.
b. Rollers: Use roller of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.

3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

F. Mechanical Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and in occupied spaces.

G. Mechanical items to be painted include, but are not limited to, the following:

1. Piping, pipe hangers, and supports
2. Tanks
3. Ductwork
4. Insulation
5. Motors and mechanical equipment
6. Accessory items

H. Electrical items to be painted include, but not limited to, the following:

1. Conduit and fittings
2. Exposed faces of Panel boards.

I. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

J. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted and finished an that has been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with not burn through or other defects to insufficient sealing.

K. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, and ropiness, or other surface imperfections will not be acceptable.

L. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats.

M. Completed Work: match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 FIELD QUALITY CONTROL

A. The Owner reserves the right to test any application at any time and as often as the Owner deems necessary during the period when paint is being applied:

1. The Owner may direct the Contractor to stop painting if test results show material being used does not comply with specified requirements. The Contractor shall remove non-complying paint from the site, pay for testing, and repaint surfaces previously coated with the rejected paint. If necessary, the Contractor may be required to remove rejected paint form previously painted surfaces if, on repainting with specified paint, the 2 coats are incompatible.

3.5 CLEAN-UP AND PROTECTION

A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day.

Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

B. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

At the completion of the work of other trades, touch up and restore all damaged or defaced painted surfaces.

C. Provide five gallons of each color and type of paint to the owner upon completion of all work.

3.6 GUARANTEE

This subcontractor shall guarantee all work under this Section of the Contract for one year after the date of acceptance against blistering, checking, alligatoring, and other defects attributing to faulty surface preparation, materials or workmanship. Re-finish all defective areas as directed.

END OF SECTION

SECTION 10522 - FIRE EXTINGUISHERS, CABINETS AND ACCESSORIES

1.0 GENERAL

1.0 RELATED DOCUMENTS

The drawings, Instructions to Bidders, Form of Proposal, General Conditions, Supplementary General Conditions and Division 1 are included herein and govern work under this section.

1.1 DESCRIPTION OF WORK

A. Extent of fire extinguishers, cabinets and accessories is indicated on drawings.

B. Definition: "Fire extinguishers" as used in this section refers to units which can be hand-carried as opposed to those which are equipped with wheels or to fixed fire extinguishing systems.

C. Types of products required include:

1. Fire extinguishers
2. Fire extinguisher cabinets
3. Mounting brackets

1.2 QUALITY ASSURANCE

A. Single Source Responsibility: Obtain products in this section from one manufacturer.

B. UL-Listed Products: Provide new portable fire extinguishers which are listed and bear UL "Listing Mark" for type, rating, and classification of extinguisher indicated.

C. FM Listed Products: Provide new portable fire extinguishers which are approved by Factory Mutual Research Corporation for type, rating, and classification of extinguisher indicated and carry appropriate FM marking.

1.3 SUBMITTALS

Product Data: Submit product data for each type of product included in this section. For fire extinguisher cabinets include roughing-in dimensions and details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type and materials, trim style and door construction, and panel style and materials.

1.4 CLOSEOUT SUBMITTALS

A. Upon completion of the Work of this Section, Contractor shall submit to the Architect/Engineer, all required closeout documents.

B. Contractor shall submit a marked-up set of drawings indicating any changes made during construction to the Architect/Engineer.

C. Upon completion, submit to the Architect/Engineer, a Contractor's Affidavit of Payment of Debts and Claims, and Release of Liens.

D. Refer to General Conditions for additional requirements.

1.5 SAMPLES

Submit for verification purposes, samples of each required finish. Prepare samples on metal of same gage as used for actual production run. Where normal color variations are to be expected, include two (2) or more units in each sample set showing limits of variation.

For initial selection of colors and finishes, submit manufacturer's color cards showing full range of standard colors available.

2.0 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

Manufacturer: Subject to compliance with requirement, provide products of one of the following:

A. J.L. Industries

B. Larsen's Manufacturing Company

2.2 FIRE EXTINGUISHERS

A. General: Provide fire extinguishers for each extinguisher cabinet and other locations indicated, in colors and finishes selected by Architect from manufacturer's standard which comply with requirements of governing authorities.

1. Fill and service extinguishers to comply with requirements of governing authorities and manufacturer's requirement.

2. Abbreviations indicated below to identify extinguisher types related to UL classification and rating system and not, necessarily to type and amount of extinguishing material contained in extinguisher.

B. Multi-Purpose Dry Chemical Type: UL-rated 4-A:60-B:C, 10 lb. nominal capacity, in enameled steel container, for Class A, Class B and Class C fires.

2.3 MOUNTING BRACKETS

A. Provide manufacturer's standard brackets designed to prevent accidental dislodgement of extinguisher, of sizes required for type and capacity of extinguisher indicated, in manufacturer's standard plated finish.

1. Provide brackets for extinguishers not located in cabinets.
2. B-2 wall bracket by Larsen's to be used as a standard.

2.4 FIRE EXTINGUISHER CABINETS

A. General: Provide fire extinguisher cabinets where indicated, of suitable size for housing fire extinguishers of types and capacities indicated.

B. Construction: Manufacturer's standard enameled steel box, with trim, frame, door and hardware to suit cabinet type, trim style, and door style indicated. Weld all joints and grind smooth. Miter and weld perimeter door frames.

C. Cabinet Type: Suitable for mounting conditions indicated, of the following types:

1. Recessed: Cabinet box (tub) fully recessed in walls of sufficient depth to suit style of trim indicated.
2. Model 2409-R2-V-Duo Door by Larsen's to used as a standard.

D. Trim Style: Fabricate trim in one piece with corners mitered, welded and ground smooth.

E. Exposed Trim: One-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend).

1. Square-Edge Trim: Square edges with backbend depths as follows: 1/4" to 5/16".
2. Trim Metal: Enameled steel.

F. Door Material and Construction: Manufacturer's standard door construction of material indicated, coordinated with cabinet types and trim styles selected.

1. Enameled Steel: Manufacturer's standard finish, hollow steel door construction with tubular stiles and rails.

G. Door Style: Manufacturer's standard design as indicated below and on drawing.

1. Vertical Duo Panel: DSA Glass with catch.

H. Door Hardware: Provide manufacturer's standard door operating hardware of proper type for cabinet type, trim style and door material and style indicated. Provide either level handle with cam action latch, or door pull, exposed or concealed, and friction latch. Provide concealed or continuous type hinge permitting door to open 180 degrees.

2.5 FACTORY FINISHING OF FIRE EXTINGUISHER CABINETS

A. General: Comply with NAAMM "Metal Finishes Manual" for finish designations and application recommendations except as otherwise indicated. Apply finishes in factory after products are assembled. Protect cabinets with plastic or paper covering, prior to shipment.

B. Painted Finishes: Provide painted finish to comply with requirements indicated below for extent, preparation and type:

1. Extent of Painted Finish: Apply painted finish to both concealed and exposed surfaces to cabinet components except where other than a painted finish is indicated.
2. Color: Provide color as selected by Architect from Manufacturer's standard colors.
3. Preparation: Clean surfaces of dirt, grease and loose rust or mill scale.
4. Baked Enamel Finish: Immediately after cleaning and pretreatment, apply Cabinet Manufacturer's standard baked enamel finish system to the following surfaces:
   a. Interior of cabinet.
   b. Exterior of cabinet.

3.0 EXECUTION

3.1 INSTALLATION

A. Install items included in this section in locations and at mounting heights indicated, or if not indicated, at heights to comply with applicable regulations of governing authorities.

1. Prepare recesses in walls for fire extinguisher cabinets as required by type and size of cabinet and style of trim and to comply with manufacturer's instructions.
2. Securely fasten mounting brackets and fire extinguisher cabinets to structure, square and plumb, to comply with manufacturer's instructions.
3. Install fire extinguishers 3'-6" from finish floor to top of extinguisher.
4. Top of cabinet shall be 3'-6" from finish floor.

3.2 IDENTIFICATION

A. Identify existence of fire extinguisher in cabinet with lettering spelling "FIRE EXTINGUISHER" applied to door by process indicated below. Provide lettering to comply with requirements indicated for letter style, color, size, spacing and location or, if not otherwise indicated, as selected by Architect from Manufacturer's standard arrangements.

1. Application Process: Silk screen.

B. Identify bracket-mounted extinguishers with red letter decals spelling "FIRE EXTINGUISHER" applied to wall surface. Letter size, style and location as selected by Architect.

END OF SECTION

SECTION 10540 - SPECIALTY SIGNS

1.0 GENERAL

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work in this section.

1.1 DESCRIPTION OF WORK

A. Extent of specialty signs is shown on drawings or as provided by Owner.
   1. Furnish all material and labor necessary to fabricate and install signage.

B. Specialty signs include the following:

   1. Room identification system.
   2. All necessary signage to receive Certificate of Occupancy.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions for each type of sign required.

B. Submit signage schedule in manufacturer's format for verification of text/copy.

C. Samples: Submit samples of each color and finish of exposed materials and accessories required for specialty signs. Architect's review of samples will be for color and texture only. When requested, furnish full-size samples of specialty sign materials.

D. Shop Drawings: Submit shop drawings for fabrication and erection of specialty signs. Include plans, elevations and large scale details of sign wording and lettering layout. Show anchorages and accessory items. Furnish location template drawings for items supported or anchored to permanent construction.

1.3 QUALIFICATIONS

A. Manufacturer specializing in fabricating the products specified with a minimum of 5 years experience. Obtain signs from one source and a single manufacturer.

2.0 PRODUCTS

2.1 IDENTIFICATION SYSTEMS

A. Manufacturer: Provide interior signs as manufactured by one of the following:

   1. Architectural Graphics

2. Lynn Sign Co.
3. Mid-Michigan Stamps and Signs, Inc.
4. Adapt Take Form Graphics

2.2 SIGN STANDARDS

A Type Style: As selected by Owner. Copy shall be true, clean, accurate reproduction of typeface(s). Upper and lower case as indicated by Owner. Letter spacing to be normal and interline spacing shall be set by manufacturer.

B. Arrows, symbols and logo art: To be provided as in style, sizes colors, and spacing as requested by Owner and/or shown on drawings.

C. Braille: Grade II perfectly round, clear Braille beads. Tactile requirements in adherence to ADA Specifications.

D. Color and Finishes:

1. Submit complete color samples to Architect for approval
2. Finishes to meet current federal ADA and state requirements.

E. Room Identification: Surface mount signs of type indicated, adjacent to doors on latch side.

F. Plastic Sign Plates: Plastic signs consist of 1/16" matte acrylic that is engraved through the exposed ply of the plastic laminate sheet to expose the contrasting core ply laminated to a base of 1/8" opaque acrylic.

G. Mounting of Signs: per manufacturer’s installation instructions. Installation locations shall be in accordance with ADA specifications.

H. Room numbering to be coordinated between signage provider and owner.

I. All signs, including work station and room ID’s shall have a matching appearance and constructed utilizing the same manufacturing process to assure a consistent look throughout.

3.0 EXECUTION

3.1 INSTALLATION

A. Installer shall examine signs with Contractor for defects, damage and compliance with specifications. Installation shall not proceed until unsatisfactory conditions are corrected.

B. Install sign units and components at locations shown securely mounted with concealed theft-resistant fasteners, unless otherwise indicated. Attach signs to substrates in accordance with manufacturer's instructions.

C. Install level, plumb, and at proper height. Cooperate with other trades for installation of sign units to finish surfaces. Repair or replace damaged units as directed by Architect.

D. Installation locations shall be in accordance with ADA specifications.

E. Location of Signs

1. All Doors and Rooms - Names to be provided by Owner.

3.3 DELIVERY AND STORAGE

A. Package and prevent damage or deterioration during shipment, handling, storage and installation. Products should remain in original packaging until removal is necessary.

3.4 WARRANTY

A. Provide manufacturer's warranty against defect in materials or workmanship for a minimum of one (1) year.

END OF SECTION

SECTION 12670 - ENTRANCE MATS

PART 1 GENERAL

The drawings, Instructions to Bidders, Form of Proposal, General Conditions, Supplementary General Conditions, and Division 1 are included herein and govern work under this section.

1.1 SCOPE OF WORK

Provide all materials, labor and equipment necessary to provide Entrance Mat as indicated on drawings and specified herein.

1.2 RELATED SECTIONS:

A. Submit samples of product to be used for Architects approval.
B. Related Sections: The following sections contain requirements related to this section:
   1. Grouting frames into recess; refer to sections 03300 " Case-In-Place Concrete" and 03600 "Grout"

1.3 REFERENCES:

A. American Society for testing and Materials (ASTM)
B. The Aluminum Association
C. The Carpet and Rug Institute (CRI)
D. The National Floor Safety Institute (NFSI)

1.4 SUBMITTALS:

A. Product data for each type of floor mat and frame specified including manufacturer's specifications and installation instructions.

1.5 A. Shop Drawings: Indicate –
   1. Thickness
   2. Shape and layout of mat and frame
   3. Frame Edge details
   4. Materials
   5. Field verified dimensions for mats
   6. Detail of Spline locations, profiles, anchors and accessories

1.6 A. Maintenance data of manufacturer's instructions for cleaning and maintaining floor mats.

1.7 Quality Assurance

A. Flammability in accordance with ASTM E648, Class 1. Critical radiant flux, minimum 0.45 watts/m2.
C. Slip Resistance in accordance with ASTM D-2047-96, Co-efficient of friction, minimum 0.60 for accessible routes.
D. Standard rolling load performance 300 lb/wheel.
E. Obtain mats and frames from one source of a single manufacturer.

1.8 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver to project site and protect against damage before and after installation.

1.9 PROJECT CONDITIONS

PART 2 PRODUCTS

2.1 MATERIALS

Manufacturer:	Nuway-Forbo Flooring
Product:	Zone 1 Primary External: Nuway Elements 17mm multi directional anti-slip system Zone 2 Primary Internal: Nuway Grid 17mm with Coral Classic Raven Black insert Zone 3 Secondary Internal: Coral Classic Raven Black 4730

PART 3 EXECUTION

3.1 EXAMINATION AND MAT INSTALLATION

A. Verify conditions, examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

B. Cut and install mat according to manufacturers' instructions and recommendations

C. Coordinate top of mat surface with bottom of doors that swing across to provide enough clearance between door and mat.

D. Do not install materials until conditions are acceptable.

3.2 CLEANING

A. Clean after installation, according to manufacturers' recommendations.

B. Provide owner with maintenance instructions.

3.3 PROTECTION

A. Protect mat and frame until construction traffic has ended and project is near substantial completion.

END OF SECTION

SECTION 05 40 00 - COLD-FORMED METAL FRAMING

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. Load-bearing wall framing.
2. Exterior non-load-bearing wall framing.
3. Floor joist framing.
4. Roof rafter framing.
5. Ceiling joist framing.
6. Soffit framing.

B. Related Requirements:

1. Section 05 50 00 "Metal Fabrications" for masonry shelf angles and connections.
2. Section 09 22 16 "Non-Structural Metal Framing" for interior non-load-bearing, metal-stud framing and ceiling-suspension assemblies.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct meeting at Project site between GC and Sub-Contractor.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of cold-formed steel framing product and accessory.

B. Shop Drawings:

1. Include layout, spacings, sizes, thicknesses, and types of cold-formed steel framing; fabrication; and fastening and anchorage details, including mechanical fasteners.
2. Indicate reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.

C. Delegated-Design Submittal: For cold-formed steel framing.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For testing agency.

B. Welding certificates.

C. Product Test Reports: For each listed product, for tests performed by a qualified testing agency.

1. Steel sheet.
2. Expansion anchors.
3. Power-actuated anchors.
4. Mechanical fasteners.
5. Vertical deflection clips.
6. Horizontal drift deflection clips
7. Miscellaneous structural clips and accessories.

D. Research Reports: For non-standard cold-formed steel framing, from ICC-ES.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.

B. Product Tests: Mill certificates or data from a qualified independent testing agency indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.

C. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."

D. Comply with AISI S230 "Standard for Cold-Formed Steel Framing - Prescriptive Method for One and Two Family Dwellings."

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect cold-formed steel framing from corrosion, moisture staining, deformation, and other damage during delivery, storage, and handling.

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. AllSteel & Gypsum Products, Inc.
2. California Expanded Metal Products Company.
3. ClarkWestern Building Systems, Inc.
4. Consolidated Fabricators Corp.; Building Products Division.
5. Craco Mfg., Inc.
6. Custom Stud Inc.
7. Design Shapes in Steel.
8. Dietrich Metal Framing; a Worthington Industries company.
9. Formetal Co. Inc. (The).
10. MarinoWARE.
11. MBA Building Supplies, Inc.

12. Nuconsteel; a Nucor Company.
13. Olmar Supply, Inc.
14. Quail Run Building Materials, Inc.
15. SCAFCO Corporation.
16. Southeastern Stud & Components, Inc.
17. State Building Products, Inc.
18. Steel Construction Systems.
19. Steel Network, Inc. (The).
20. Steel Structural Systems.
21. Steeler, Inc.
22. Super Stud Building Products, Inc.
23. Telling Industries, LLC.
24. United Metal Products, Inc.
25. United Steel Manufacturing.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design cold-formed steel framing.

B. Structural Performance: Provide cold-formed steel framing capable of withstanding design loads within limits and under conditions indicated.

1. Design Loads: As indicated.
2. Deflection Limits: Design framing systems to withstand design loads without deflections greater than the following:

    a. Interior Load-Bearing Wall Framing: Horizontal deflection of [1/240] of the wall height under a horizontal load of 5 lbf/sq. ft.
    b. Exterior Non-Load-Bearing Framing: Horizontal deflection of [1/240] of the wall height.

3. Design framing systems to provide for movement of framing members located outside the insulated building envelope without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F.
4. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure as follows:

    a. Upward and downward movement of 3/4 inch.

5. Design exterior non-load-bearing wall framing to accommodate horizontal deflection without regard for contribution of sheathing materials.

C. Cold-Formed Steel Framing Design Standards:

1. Floor and Roof Systems: AISI S210.
2. Wall Studs: AISI S211.
3. Headers: AISI S212.
4. Lateral Design: AISI S213.

D. AISI Specifications and Standards: Unless more stringent requirements are indicated, comply with AISI S100 and AISI S200.

E. Fire-Resistance Ratings: Comply with ASTM E 119; 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.

2.3 COLD-FORMED STEEL FRAMING, GENERAL

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:

1. Grade: As required by structural performance.
2. Coating: G90 or equivalent.

C. Steel Sheet for Vertical Deflection Clips: ASTM A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:

1. Grade: As required by structural performance.
2. Coating: [G60 (Z180)].

2.4 FRAMING ACCESSORIES

A. Fabricate steel-framing accessories from steel sheet, ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of same grade and coating weight used for framing members.

B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:

1. Supplementary framing.
2. Bracing, bridging, and solid blocking.
3. Web stiffeners.
4. Anchor clips.
5. End clips.
6. Foundation clips.
7. Gusset plates.
8. Stud kickers and knee braces.
9. Joist hangers and end closures.
10. Hole reinforcing plates.
11. Backer plates.

2.5 ANCHORS, CLIPS, AND FASTENERS

A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123/A 123M.

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

C. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing per ASTM E 488 conducted by a qualified testing agency.

D. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with allowable load capacities calculated according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.

E. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping, steel drill screws.

1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.

F. Welding Electrodes: Comply with AWS standards.

2.6 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: ASTM A 780.

B. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.

C. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents, complying with ASTM C 1107/C 1107M, with fluid consistency and 30-minute working time.

D. Shims: Load bearing, high-density multimonomer plastic, and nonleaching; or of cold-formed steel of same grade and coating as framing members supported by shims.

E. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch (6.4 mm) thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

2.7 FABRICATION

A. Fabricate cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.

1. Fabricate framing assemblies using jigs or templates.
2. Cut framing members by sawing or shearing; do not torch cut.
3. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, pneumatic pin fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.

    a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
    b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by no fewer than three exposed screw threads.

4. Fasten other materials to cold-formed steel framing by welding, bolting, pneumatic pin fastening, or screw fastening, according to Shop Drawings.

B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.

C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet (1:960) and as follows:

1. Spacing: Space individual framing members no more than plus or minus 1/8 inch (3 mm) from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
2. Squareness: Fabricate each cold-formed steel framing assembly to a maximum out-of-square tolerance of 1/8 inch (3 mm).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Before sprayed fire-resistive materials are applied, attach continuous angles, supplementary framing, or tracks to structural members indicated to receive sprayed fire-resistive materials.

B. After applying sprayed fire-resistive materials, remove only as much of these materials as needed to complete installation of cold-formed framing without reducing thickness of fire-resistive materials below that are required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.

C. Install load bearing shims or grout between the underside of load-bearing wall bottom track and the top of foundation wall or slab at locations with a gap larger than 1/4 inch (6 mm) to ensure a uniform bearing surface on supporting concrete or masonry construction.

D. Install sealer gaskets at the underside of wall bottom track or rim track and at the top of foundation wall or slab at stud or joist locations.

3.3 INSTALLATION, GENERAL

A. Cold-formed steel framing may be shop or field fabricated for installation, or it may be field assembled.

B. Install cold-formed steel framing according to AISI S200 and to manufacturer's written instructions unless more stringent requirements are indicated.

C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.

1. Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch.

D. Install cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened.

1. Cut framing members by sawing or shearing; do not torch cut.
2. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.

a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
b. Locate mechanical fasteners and install according to Shop Drawings, and complying with requirements for spacing, edge distances, and screw penetration.

E. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.

F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.

G. Do not bridge building expansion joints with cold-formed steel framing. Independently frame both sides of joints.

H. Install insulation, specified in Section 072100 "Thermal Insulation," in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.

I. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's approved or standard punched openings.

J. Erection Tolerances: Install cold-formed steel framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet (1:960) and as follows:

1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.4 LOAD-BEARING WALL INSTALLATION

A. Install continuous top and bottom tracks sized to match studs. Align tracks accurately and securely anchor at corners and ends, and at spacings as follows:

1. Anchor Spacing: To match stud spacing.

B. Squarely seat studs against top and bottom tracks with gap not exceeding of 1/8 inch between the end of wall framing member and the web of track. Fasten both flanges of studs to top and bottom tracks. Space studs as follows:

1. Stud Spacing: As indicated.

C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar configurations.

D. Align studs vertically where floor framing interrupts wall-framing continuity. Where studs cannot be aligned, continuously reinforce track to transfer loads.

E. Align floor and roof framing over studs according to AISI S200, Section C1. Where framing cannot be aligned, continuously reinforce track to transfer loads.

F. Anchor studs abutting structural columns or walls, including masonry walls, to supporting structure as indicated.

G. Install headers over wall openings wider than stud spacing. Locate headers above openings as indicated. Fabricate headers of compound shapes indicated or required to transfer load to supporting studs, complete with clip-angle connectors, web stiffeners, or gusset plates.

1. Frame wall openings with not less than a double stud at each jamb of frame as indicated on Shop Drawings. Fasten jamb members together to uniformly distribute loads.
2. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with clip angles or by welding, and space jack studs same as full-height wall studs.

H. Install supplementary framing, blocking, and bracing in stud framing indicated to support fixtures, equipment, services, casework, heavy trim, furnishings, and similar work requiring attachment to framing.

1. If type of supplementary support is not indicated, comply with stud manufacturer's written recommendations and industry standards in each case, considering weight or load resulting from item supported.

I. Install horizontal bridging in stud system, spaced vertically as indicated on Shop Drawings. Fasten at each stud intersection.

1. Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs with a minimum of two screws into each flange of the clip angle for framing members up to 6 inches deep.
2. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
3. Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.

J. Install steel sheet diagonal bracing straps to both stud flanges, terminate at and fasten to reinforced top and bottom tracks. Fasten clip-angle connectors to multiple studs at ends of bracing and anchor to structure.

K. Install miscellaneous framing and connections, including supplementary framing, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.

3.5 EXTERIOR NON-LOAD-BEARING WALL INSTALLATION

A. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.

B. Fasten both flanges of studs to top and bottom track unless otherwise indicated. Space studs as follows:

1. Stud Spacing: As indicated.

C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.

D. Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.

1. Install single deep-leg deflection tracks and anchor to building structure.
2. Install double deep-leg deflection tracks and anchor outer track to building structure.
3. Connect vertical deflection clips to studs and anchor to building structure.
4. Connect drift clips to cold-formed metal framing and anchor to building structure.

E. Install horizontal bridging in wall studs, spaced vertically in rows indicated on Shop Drawings but not more than 48 inches apart. Fasten at each stud intersection.

1. Top Bridging for Single Deflection Track: Install row of horizontal bridging within 18 inches of single deflection track. Install a combination of bridging and stud or stud-track solid blocking of width and thickness matching studs, secured to stud webs or flanges.

   a. Install solid blocking at centers indicated on Shop Drawings.

2. Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs.
3. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
4. Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.

F. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.

3.6 JOIST INSTALLATION

A. Install perimeter joist track sized to match joists. Align and securely anchor or fasten track to supporting structure at corners, ends, and spacing indicated on Shop Drawings.

B. Install joists bearing on supporting frame, level, straight, and plumb; adjust to final position, brace, and reinforce. Fasten joists to both flanges of joist track.

1. Install joists over supporting frame with a minimum end bearing of 1-1/2 inches.
2. Reinforce ends and bearing points of joists with web stiffeners, end clips, joist hangers, steel clip angles, or steel-stud sections as indicated on Shop Drawings.

C. Space joists not more than 2 inches from abutting walls, and as follows:

1. Joist Spacing: As indicated.

D. Frame openings with built-up joist headers consisting of joist and joist track, or another combination of connected joists if indicated.

E. Install joist reinforcement at interior supports with single, short length of joist section located directly over interior support, with lapped joists of equal length to joist reinforcement, or as indicated on Shop Drawings.

1. Install web stiffeners to transfer axial loads of walls above.

F. Install bridging at intervals indicated on Shop Drawings. Fasten bridging at each joist intersection as follows:

1. Bridging: Joist-track solid blocking of width and thickness indicated, secured to joist webs.
2. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and joist-track solid blocking of width and thickness indicated. Fasten flat straps to bottom flange of joists and secure solid blocking to joist webs.

G. Secure joists to load-bearing interior walls to prevent lateral movement of bottom flange.

H. Install miscellaneous joist framing and connections, including web stiffeners, closure pieces, clip angles, continuous angles, hold-down angles, anchors, and fasteners, to provide a complete and stable joist-framing assembly.

3.7 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed steel framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION 05 40 00

SECTION 071113 SELF-ADHERING SHEET WATERPROOFING
PART 1: GENERAL

1.01 GENERAL REQUIREMENTS

A. The General Conditions, the Supplementary Conditions, the Instructions to Bidders and Division One General Requirements shall be read in conjunction with and govern this section.

B. The Specification shall be read as a whole by all parties concerned. Sectioning of the Specification is for convenience. Each Section may contain more or less than the complete work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their work.

1.02 DESCRPTION

A. Supply labor, materials, plant, tools and equipment to complete the Work as shown on the Drawings and as specified herein including, but not limited to the following:

1. Primer & Self-Adhered SBS Modified Asphalt Waterproofing Membrane,

1.03 RELATED WORK

A. Division 7 Sealants & Flashings

1.04 REFERNECES

A. CAN/CGSB-37.9M: Primer, Asphalt, Unfilled for Asphalt Roofing, Dampproofing and Waterproofing.

1.05 SUBMITALS

A. Prior to commencing the Work, submit copies of manufacturers current certification to ISO. Membrane, primers, sealants, adhesives and associated auxiliary materials shall be included.

B. Prior to commencing the Work, submit references clearly indicating that the materials proposed have been installed for not less than fifteen years on projects of similar scope and nature. Submit references for a minimum of ten projects.

C. Prior to commencing the Work submit manufacturers complete set of standard details for waterproofing systems.

1.06 Quality Assurance

A. Perform Work in accordance with the printed requirements of the membrane manufacturer and this specification. Advise designer of any discrepancies prior to commencement of the Work.

B. Maintain one copy of manufacturers literature on site throughout the execution of the Work.

C. At the beginning of the Work and at all times during the execution of the Work, allow access to site by the waterproofing membrane manufacturers representative.

D. Materials used in this Section, including, primers, mastics and membranes, asphaltic protection boards, composite drainage boards and expansion joint membranes shall be fully compatible and shall be sourced and or produced by one manufacturer.

E. Submit copies of the membrane manufacturers current ISO certification including the manufacturing of the membrane, primer, mastics, adhesives and protection board.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.

B. Cold applied elastomeric membrane should be stored in closed containers outdoors.

C. Store membrane at temperature of 40 degrees F and above to facilitate handling.

D. Membrane contains petroleum solvents and are flammable. Do not use near open flame.

E. Store role materials horizontally in original packaging.

F. Store adhesives and primers at temperatures of 40 degrees F and above to facilitate handling.

G. Keep solvents away from open flame or excessive heat.

1.08 CO-ORDINATION

A. Ensure continuity of the waterproofing membrane throughout the scope of this section.
B. Work shall be so scheduled as to provide a watertight seal at the end of each working day on the areas worked upon during the day.

1.09 SITE CONDITONS

A. Environmental Requirements
   1. No installation work shall be performed during rainy or inclement weather and on frost or wet covered surfaces.

B. Protection
   1. Provide adequate protection of materials and work of this section from damage by weather backfilling operations and other causes.
   2. Protect work of other trades from damage resulting from work of this section. Make good such damage at own expense to satisfaction of the consultant.
   3. Apply protection board as soon as possible after installation of membrane.

1.10 ALTERNATES

A. Submit requests for alternates to Architect for review and approval.
B. Alternate submission format to include:
   1. Submit evidence that alternate materials meet or exceed performance characteristics of Product requirements and documentation from an approved independent testing laboratory certifying that the performance of the waterproofing membrane system including drain boards and transition sheets, exceed the requirements of the National Building Code.
   2. Submit copies of manufacturers' current ISO certification.
   3. Submit references clearly indicating that the membrane manufacturer has successfully completed projects on a annual basis of similar scope and nature for a minimum of fifteen years.
   4. Submit manufacturers' complete set of standard details for the waterproofing membrane systems showing a continuous plane of water tightness throughout the building envelope.
C. Submit requests for alternate to this specification a minimum of fifteen (10) working days prior to tender closing for evaluation. Include a list of 25 projects executed over the past fifteen years.
D. Acceptable alternates will be confirmed by addendum. Substitute materials not approved in writing prior to tender closing shall not be permitted for use on this project.

1.11 Warranty

.1 For the Work of this Section, the 12 months warranty period prescribed in subsection GC 32.1 of General Conditions "C" is extended to [24 months] [60 months].
.2 Contractor hereby warrants the waterproofing membrane leak coverage in [accordance with GC24], but for two years.
.3 Waterproofing membrane manufacturer hereby warrants that the waterproofing membrane for leak coverage as a result of faulty materials for a period of ten years [five years for single ply without Henry DB Drain Board). Scope of warranty shall include materials required to return the membrane to a watertight condition.

PART 2: PRODUCTS

2.01 MATERIALS

A. Waterproofing membrane components and accessories must be obtained as a single-source from the membrane manufacturer to ensure total system compatibility and integrity.

   1. Acceptable Manufacturer: Henry Company.
      909 N Sepulveda Blvd, Suite 650
      El Segundo, CA 90245
      (800) 598 7663

2.02 WATERPROOFING MEMBRANE (Basis-of-Design)

A. Primary sheet applied self-adhered waterproofing membrane shall be Blueskin® WP200 manufactured by Henry, 1.5mm (60 mils) SBS modified bitumen, self-adhering sheet membrane with a cross-laminated polyethylene film, and having the following physical properties:
   1. Thickness: 1.5 mm (60 mils) min.,
   2. Flexibility: Pass @ -40 degrees C to ASTM D1970,
   3. Vapour permeance: 2.8 ng/Pa.s.m² (0.05 perms) to ASTM E96,
   4. Tensile strength (membrane): 2.24 MPa to ASTM D412,
   5. Tensile strength (film): 34.5 MPa to ASTM D882,
   6. Elongation: 300% to ASTM D412,
   7. Puncture resistance: 222 N min. to ASTM E154.

2.03 PRIMER

A. Primer for self-adhering membranes at temperatures above 25 degrees F shall be Aquatac™ Primer manufactured by Henry, a polymer emulsion based adhesive, quick setting, having the following physical properties:
   1. Colour: Aqua;
   2. Weight: 8.7 lbs/gal;
   3. Solids by weight: 53%;
   4. Water based, no solvent odours
   5. Drying time (initial set): 30 minutes at 50% RH and 70 degrees F;

2.04 LIQUID MEMBRANE & TERMINATION SEALANT

A. Termination Sealant shall be HE925 BES Sealant manufactured by Henry; a moisture cure, medium modulus polymer modified sealing compound having the following physical properties:
   1. Compatible with sheet air barrier, roofing and waterproofing membranes and substrate,
   2. Complies with Fed. Spec. TT-S-00230C, Type II, Class A
   3. Complies with ASTM C 920, Type S, Grade NS, Class 25
   4. Elongation: 450 – 550%
   5. Remains flexible with aging
   6. Seals construction joints up to 1 inch wide

PART 3: EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and conditions are ready to accept the Work of this section. Commencement of the work or any parts thereof shall mean acceptance of the prepared substrate.

3.02 PREPARATION

A. All surfaces must be sound, dry, clean and free of oil, grease, dirt, excess mortar, frost or other contaminants. Fill spalled areas in substrate to provide an even plane.

B. New concrete should be cured for a minimum of 7 days and must be dry before waterproofing membranes are applied. Lightweight structural concrete must be cured a minimum of 14 days.

C. Use appropriate waterproofing membrane primer as recommended by manufacturer based on air and surface temperature at time of application.

3.03 PRIMER

A. Apply primer for self-adhered membrane by roller or spray at rate recommended by manufacturer.

B. Allow minimum 30 minute open time. Primed surfaces not covered by waterproofing membrane during the same working day must be re-primed.

3.04 PROJECTIONS

A. Extend waterproofing membrane tight to projection and seal with liquid membrane extending 3 inches along projection and 3 inches onto waterproofing membrane.

3.05 WATERPROOFING MEMBRANE - VERTICAL APPLICATIONS

A. Apply waterproofing membrane to prepared substrate in lengths of 6 feet or less.

B. Provide 3 inch laps at both sides and ends. Position for alignment and remove protective film. Press firmly into place. Promptly roll all laps with a counter top roller to effect seal. If more than one length is required on a vertical surface, apply in a shingle fashion.

C. Terminate membrane using termination mastic or termination bar, reglet or counter flashing as indicated. Refer to manufacturers standard details.

D. All laps within 12 inches of a 90 degrees change in plane are to be sealed with termination sealant.

3.06 WATERPROOFING MEMBRANE - HORIZONTAL APPLICATIONS

A. Apply 2 plies of waterproofing membrane to prepared substrate in lengths of 6 feet or less.

B. Provide 3 inches laps at both sides and ends. Position for alignment and remove protective film. Press firmly into place. Promptly roll all laps with a counter top roller to effect seal. If more than one length is required on a vertical surface, apply in a shingle fashion.

C. Terminate membrane using termination mastic or termination bar, reglet or counter flashing as indicated. Refer to manufacturers standard details.

D. All laps within 12 inches of a 90 degrees change in plane are to be sealed with termination sealant.

3.07 PROTECTION

A. Protect waterproofing membrane from other trades during construction.

END OF SECTION

SECTION 07 42 13 – METAL WALL PANELS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Composite Metal panels.

1. Applications of composite metal panels include:

a. Exterior installation of composite metal panels.

b. Interior installation of composite metal panels.

B. Related Sections: Section(s) related to this section include:

1. Cold-Formed Metal Framing: Division 05 Cold-Formed Metal Framing Sections.
2. Sheet Metal Flashing and Trim: Division 07 Flashing and Sheet Metal Sections.
3. Joint Sealers: Division 07 Joint Sealers Sections.
4. Aluminum Windows: Division 08 Windows Sections.
5. Glazing: Division 08 Glass and Glazing Section.
6. Metal Framed Curtain Wall: Division 08 Glazed Curtain Wall Sections.

1.02 REFERENCES

A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to the extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. ASTM International (ASTM):

1. ASTM D1781 Standard Test Method for Climbing Drum Peel for Adhesives.
2. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
3. ASTM E108 (Modified) Standard Test Methods for Fire Tests of Roof Coverings.
4. ASTM E283 Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
5. ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors By Uniform Static Air Pressure Difference.
6. ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors By Uniform Static Air Pressure Difference.

C. American Architectural Manufacturers Association (AAMA):

1. AAMA 2605 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

D. Underwriters Laboratories Inc. (UL):

1. UL 94 Standard for Flammability of Plastic Materials for Parts in Devices and Appliances.

E. International Organization for Standardization (ISO):

1. ISO 9001-2000 Quality Management Systems - Requirements.

1.03 SYSTEM DESCRIPTION

A. Performance Requirements: Provide composite metal panels which have been manufactured, fabricated and installed to withstand loads from deflection and thermal movement and to maintain performance criteria stated by manufacturer without defects, damage or failure.

B. Water and Air Leakage: Provide systems that have been tested and certified to conform to the following criteria:

1. Air Leakage (ASTM E283): Not more than 0.06 (cfm)/sf of wall area (0.003 (L/s) m^2), when tested at 1.57 psf (0.075 kPa).

2. Water Penetration (ASTM E331): No water infiltration under static pressure at a differential of 10% of inward acting design load, 6.24 psf (0.299 kPa) minimum, after 15 minutes.

a. Water penetration is defined as the appearance of uncontrolled water in the wall.

b. Wall design shall feature provisions to drain to the exterior face of the wall any leakage of water at joints and any condensation that may occur within the construction.

C. Structural: Provide systems that have been tested in accordance with ASTM E330 at a design pressure of psf (__ kPa) and have been certified to be without permanent deformation or failures of structural members.

1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01 Submittal Procedures Section.

B. Product Data: Submit product data, including manufacturer’s SPEC-DATA product sheet, for specified products.

C. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors and textures.

1. Include details showing thickness and dimensions of the various system parts, fastening and anchoring methods, locations of joints and gaskets and location and configuration of joints necessary to accommodate thermal movement.

D. Samples: Submit selection and verification samples for finishes, colors and textures.

1. Selected Samples: Manufacturer’s color charts or chips illustrating full range of colors, finishes and patterns available for composite metal panels with factory-applied finishes.

2. Verification Samples:

a. Structural: 12 inch × 12 inch (305 × 305 mm) sample composite panels in thickness specified, from an available stock color, including clips, anchors, supports, fasteners, closures and other panel accessories, for assembly approval. Include panel assembly samples not less than 24 inches × 24 inches (610 × 610 mm), showing 4-way joint.

b. Include separate sets of draw down samples on aluminum substrate, not less than 3 inches × 5 inches (76 × 127 mm), of each color and finish selected, for color approval. Larger samples of standard colors are available with production applied coatings.

E. Quality Assurance Submittals: Submit the following:

1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
2. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and physical requirements.
3. Manufacturer's Instructions: Manufacturer's installation instructions.
4. Manufacturer's Field Reports: Manufacturer's field reports.

F. Closeout Submittals: Submit the following:

1. Warranty: Warranty documents specified herein.

1.05 QUALITY ASSURANCE

A. Qualifications:

1. Installer Qualifications: Installer experienced in performing work of this section who has specialized in the installation of work similar to that required for this project.
    a. Certificate: When requested, submit certificate indicating qualification.
2. Manufacturer Qualifications: Company with a minimum of 5 years of continuous experience manufacturing panel material of the type specified:
    a. Able to provide specified warranty on finish.
    b. Able to provide a list of 5 other projects of similar size, including approximate date of installation and the name of the Architect for each.
    c. Able to produce the composite material without outsourcing of coating or lamination process.
    d. Able to provide certificate of registration of ISO 9001-2000.
3. Fabricator Qualifications: Company with at least 3 years of experience on similar sized metal panel projects and qualified by the panel material manufacturer. Capable of providing field service representation during construction.

B. Mock-Ups: Install at project site a job mock-up using acceptable products and approved installation methods. Obtain Owner's and Architect's acceptance of finish color (draw down samples to be used for color approval of nonstandard coil coated colors), texture and pattern and workmanship standard. Comply with Division 01 Quality Control, Mock-Up Requirements Section.

1. Mock-up Size: [Coordinate with Architect].
2. Maintenance: Maintain mock–up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

C. Preinstallation Meetings: Conduct preinstallation meeting to verify project requirements, substrate conditions, installation instructions and warranty requirements. Comply with Division 01 Project Management and Coordination, Project Meetings Section.

D. Field Quality Control: Comply with panel system manufacturer's recommendations and guidelines for field forming of panels.

1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 01 Product Requirements Sections.

B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

1. Protection: Protect finish of panels by applying heavy duty removable plastic film during production.

2. Delivery: Package composite wall panels for protection against transportation damage. Provide markings to identify components consistently with drawings.

3. Handling: Exercise care in unloading, storing and installing panels to prevent bending, warping, twisting and surface damage.

D. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.

1. Storage: Store panels in well-ventilated space out of direct sunlight.

a. Protect panels from moisture and condensation with tarpaulins or other suitable weathertight covering installed to provide ventilation.

b. Slope panels to ensure positive drainage of any accumulated water.

c. Do not store panels in any enclosed space where ambient temperature can exceed 120 degrees F (49 degrees C).

2. Damage: Avoid contact with any other materials that might cause staining, denting or other surface damage.

1.07 PROJECT CONDITIONS

A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not a limitation of, other rights Owner may have under the Contract Documents.

1. Warranty Period:

a. Panel Integrity: 10 years commencing on Date of Substantial Completion.

b. Finish: [Specify number of years] commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 COMPOSITE METAL PANELS

A. Manufacturer: Mitsubishi Plastics Composites America, Inc.

1. Contact: 401 Volvo Parkway, Chesapeake, VA 23320; Telephone (800) 422-7270; Fax: (757) 436-1896; E-mail: info@alpolic.com; website: www.alpolic-northamerica.com.

B. Proprietary Product: ALPOLIC Composite Metal Panels.

1. Standard ALPOLIC composite metal panels.

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

2.03 COMPOSITE METAL PANEL MATERIALS

A. Composite Metal Panels:

1. Core: Thermoplastic material that meets performance characteristics specified when fabricated into composite assembly.
2. Face Sheets: Aluminum alloy 3105 H14, 0.020 inch (0.51 mm) thick and as follows: [Choose coil or spray as applicable to quantity].
    a. Coil coated with a fluoropolymer paint finish that meets or exceeds values expressed in AAMA 2605 where relevant to coil coatings.
    b. Spray coated with specified finish [Less than 1000 ft^2 (93 m^2) quantities].
    c. Thermally bonded in a continuous process, under tension, to the core material.
3. Bond Integrity: Tested for resistance to delamination as follows:
    a. Peel Strength (ASTM D1781): 22.5 in-lb/in (100 N-m/m) minimum.
    b. No degradation in bond performance after 8 hours of submersion in boiling water and after 21 days of immersion in water at 70 degrees F (21 degrees C).
4. Fire Performance:
    a. Flamespread (ASTM E84): 25 maximum (4 and 6 mm).
    b. Smoke Developed (ASTM E84): 450 maximum (4 and 6 mm).
    c. Surface Flammability (Modified ASTM E108): Pass (4 and 6 mm).
    d. V-O Rating (4 mm): Comply with UL 94.

B. Production Tolerances:

1. Width: +/- 2 mm.
2. Length: +/- 4 mm.
3. Thickness (4 mm Panel): +/- 0.008 inch (0.2 mm).
4. Thickness (6 mm Panel): +/- 0.012 inch (0.3 mm).
5. Bow: Maximum 0.5% length or width.
6. Squareness: Maximum 0.2 inch (5 mm).
7. Edges of sheets shall be square and trimmed.

C. Panel Thickness: [4 mm] .

2.04 ACCESSORIES

A. General: Provide fabricator’s standard accessories, including fasteners, clips, anchorage devices and attachments.

2.05 RELATED MATERIALS

A. General: Refer to other related sections for related materials, including cold-formed metal framing, flashing and trim, joint sealers, aluminum windows, glass and glazing and curtain walls.

2.06 FABRICATION

A. General: Shop fabricate to sizes and joint configurations indicated on the drawings.

1. Where final dimensions cannot be established by field measurements, provide allowance for field adjustment as recommended by the fabricator.
2. Form panel lines, breaks and angles to be sharp and true, with surfaces that are free from warp or buckle.
3. Fabricate with sharply cut edges, with no displacement of aluminum sheet or protrusion of core.

2.07 FINISHES

A. Factory Finish: A fluoropolymer paint finish that meets or exceeds values expressed in AAMA 2605 where relevant to coil coatings.

2.08 SOURCE QUALITY

A. Source Quality: Obtain composite panel products from a single manufacturer.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify that substrate conditions are acceptable for product installation.

3.03 PREPARATION

A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.

3.04 INSTALLATION

A. General:

1. Install panels plumb, level and true, in compliance with fabricator's recommendations.
2. Anchor panels securely in place, in accordance with fabricator's approved shop drawings.
3. Comply with fabricator's instructions for installation of concealed fasteners and with provisions of Section 07 90 00 for installation of joint sealers.
4. Installation Tolerances: Maximum deviation from horizontal and vertical alignment of installed panels: 0.25 inch (6.4 mm) in 20 feet (6.1 m), non-cumulative.

3.05 FIELD QUALITY REQUIREMENTS

A. Fabricator's Field Services: Upon Owner's request, provide fabricator's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with fabricator's instructions.

3.06 ADJUSTING

A. Adjusting:

1. Repair panels with minor damage such that repairs are not discernible at a distance of 10 feet (3.1 m).

2. Remove and replace panels damaged beyond repair.
3. Remove protective film immediately after installation of joint sealers and immediately prior to completion of composite metal panel work.
4. Remove from project site damaged panels, protective film and other debris attributable to work of this section.

3.07 CLEANING

A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.

3.08 PROTECTION

A. Protection: Protect installed product's finish surfaces from damage during construction.
   1. Institute protective measures as required to ensure that installed panels will not be damaged by work of other trades.

END OF SECTION

SECTION 08 14 16 - FLUSH WOOD DOORS

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. High Pressure Decorative Laminate faced doors.

B. Related Requirements:

   1. Section 08 34 73.13 "Metal Sound Control Door Assemblies" for acoustic flush wood door assemblies over STC 47.
   2. Section 08 80 00 "Glazing" for glass view panels in flush wood doors for field installation.
   3. Section 08 88 16 “Vision Control Glass” for glass view panels with adjustable louvers in flush wood doors for field installation.
   4. Section 09 91 23 "Interior Painting" for field finishing doors.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of door. Include details of core and edge construction and trim for openings.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:

   1. Dimensions and locations of blocking.
   2. Dimensions and locations of mortises and holes for hardware.
   3. Dimensions and locations of cutouts.
   4. Undercuts.
   5. Requirements for veneer matching.
   6. Doors to be factory finished and finish requirements.
   7. Fire-protection ratings for fire-rated doors.

C. Samples for Initial Selection: For high pressure decorative laminate door faces and factory-finished doors.

D. Samples for Verification:

1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches, for each material and finish. For each wood species and transparent finish, provide set of three samples showing typical examples of color and grain to be expected in finished work.
2. Provide construction samples of doors, approximately 5 by 5 inches, with door faces and vertical edges representing actual construction to be used.

    a. Provide unfinished samples for each species of veneer and required if factory furnishing is not required, approximately 8 by 10 inches.

3. Louver blade and frame sections, minimum 6 inches long, for each material and finish specified.
4. Frames for light openings, minimum 6 inches long, for each material, type, and finish required.

1.5 INFORMATIONAL SUBMITTALS

A. Sample Warranty: For special warranty.

B. Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body when FSC Certified wood is specified.
2. A qualified manufacturer that is a member in good standing of the Window and Door Manufacturers Association.

B. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body when FSC Certified wood is specified

C. Product Performance: Provide documents showing compliance to the following WDMA attributes, validating the specified WDMA Performance Duty Level:

1. Adhesive Bonding Durability: WDMA TM-6
2. Cycle Slam: WDMA TM-7
3. Hinge Loading: WDMA TM-8
4. Screw Holding: WDMA TM-10

    a. Door Face
    b. Vertical Door Edge
    c. Horizontal Door Edge (applies when hardware is attached)

1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of referenced standard and manufacturer's written instructions.

B. Package factory-finished doors individually in manufacturer's standard plastic bags, stretch wrap, or cardboard cartons.

C. Mark each door on top rail with opening number used on Shop Drawings. Include manufacturer's order number and date of manufacture.

1.8 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weather tight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during remainder of construction period.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.

2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Marshfield DoorSystems, Inc. flush wood doors or a comparable product by one of the following:

1. Algoma Hardwoods, Inc.
2. Eggers Industries.
3. Mohawk Doors

B. Source Limitations: Obtain flush wood doors from single manufacturer.

2.2 HIGH PRESSURE DECORATIVE LAMINATE-FACED DOORS

A. Interior Solid-Core Doors - SCL:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Marshfield DoorSystems,; "Signature Series" or a comparable product by one of the following:

   a. Algoma Hardwoods
   b. Eggers Industries

2. Grade: Custom.
3. HPDL Faces: High-pressure decorative laminates complying with NEMA LD 3, Grade HGS. Vertical and post formable grade laminates are not acceptable.
4. Colors, Patterns, and Finishes:
   a. SEE A-600'S FOR PRODUCT INFORMATION

5. Exposed Vertical Edges: High-pressure decorative laminate that matches faces, applied to structural composite lumber stile after faces.
6. Horizontal Edges: Structural composite lumber. Bond smooth PVC edge band to structural composite lumber, providing cleanable surface**.**
7. Core: Structural composite lumber, fire-resistant composite, or specialty core as required per Article 2.2 and door schedule.
8. Construction: Three plies. Stiles and rails are bonded to core, and then entire unit is abrasive planed before faces are applied.
9. WDMA I.S.1-A Performance Grade: As specified in Article 2.2.

2.3 FLUSH WOOD DOORS

A. Solid Core Doors with Wood Veneer Faces (Select White Rotary Birch Doors):
   a. Mohawk Doors
      Color: To match existing adjacent wood doors.
      Submit sample to Architect for approval.

B. Fire-Rated Solid Core Doors: Comply with the following requirements.

C. Faces and AWI Grade: Provide faces and grade to match non-rated doors in same area of building, unless otherwise indicated.

1. Construction: Manufacturer's standard core construction as required to provide fire-resistance rating indicated.

2. Edge Construction: Provide manufacturer's standard laminated edge construction for improved screw-holding capability and split resistance as compared to edges composed of a single layer of treated lumber.

3. Pairs: Furnished formed steel edges and astragals for pairs of fire-rated doors, unless otherwise indicated.

a. Provide fire-rated pairs with fire-retardant stiles which are labeled and listed for kinds of applications indicated without formed steel edges and astragals.

2.4 FABRICATION

A. Fabricate flush wood doors to produce doors complying with following requirements:

1. In sizes indicated for job-site fitting.

2. Factory-prefit and premachine doors to fit frame opening sizes indicated with the following uniform clearances and bevels:
   a. Comply with tolerance requirements of AWI for prefitting. Comply with final hardware schedules and door frame shop drawings and with hardware templates.
   b. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before proceeding with factory premachining.

B. Metal Astragals: Premachine astragals and formed steel edges for hardware where required for pairs of fire-rated doors.

C. Transom and Side Panels: Fabricate matching panels with same construction, exposed surfaces and finish as specified for associated doors.

1. Fixed Transom Panels: Fabricate fixed panels with solid lumber transom bottom rail and door top rail, both rabbeted as indicated, and factory-installed springbolts for concealed attachment into jambs of metal door frames.

D. Openings: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of doors required.

1. Light Openings: Trim openings with moldings of material and profile indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and installed door frames, with Installer present, before hanging doors.

1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs. Any deficiencies must be corrected prior to door installation.
2. Reject doors with defects.

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

3.2 INSTALLATION

A. Hardware: For installation, see Section 08 71 00 "Door Hardware."

B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

1. Install fire-rated doors according to NFPA 80.

C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.

1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8 inch from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold unless otherwise indicated.

a. Comply with NFPA 80 for fire-rated doors.

2. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.
3. Trim bottom rail only to extent permitted by labeling agency.

D. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

E. Factory-Finished Doors: Do not trim factory finished doors for width.

3.3 ADJUSTING

A. Operation: Correct any deficiency that prohibits the door from swinging or operating freely. Do not remove hinge screws after initial insertion. Shims used for alignment purposes must be inserted between hinge and frame. Do not insert shims between hinge and door.

B. To prevent stile failure, insure that door closers are properly adjusted and do not limit the door opening swing. Limit door opening swing only with a properly located stop.

C. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 08 14 16