Central Connecticut State University
1615 Stanley Street - New Britain, CT 06050

DR. JOHN W. MILLER
PRESIDENT

DR. RICHARD R. BACHOO
CHIEF ADMINISTRATIVE OFFICER

MR. SAL CINTORINO
ASSISTANT CHIEF ADMINISTRATIVE OFFICER

PROJECT MANUAL

STARBUCKS CAFE RENOVATION
ELIHU BURRITT LIBRARY

January 27, 2016
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BIDDER NOTIFICATION

EACH BIDDER IS HEREBY NOTIFIED OF A SEPARATE DOCUMENT PACKAGE ENTITLED "PURCHASING DEPARTMENT INSERT DOCUMENT PACKAGE" ISSUED BY THE PURCHASING OFFICE OF THE CCSU BUSINESS OFFICE WHICH IS PUBLISHED SPECIFICALLY FOR THIS PROJECT AND CONTAINS ESSENTIAL BID DOCUMENTS. SAID DOCUMENTS MUST BE PROPERLY EXECUTED BY EACH BIDDER AND RETURNED TO THE CCSU PURCHASING DEPARTMENT AS A NECESSARY PART OF THE BID PROCESS. THE "PURCHASING DEPARTMENT INSERT DOCUMENT PACKAGE" IS INSERTED IMMEDIATELY FOLLOWING THIS NOTIFICATION SHEET AND SHALL BE CONSIDERED A PART OF THESE DOCUMENTS AS THOUGH BOUND HEREIN.
1.01 DEFINITIONS

Whenever the following terms, or pronouns are used in lieu of them, the intent and meaning shall be as follows:

A. Agency: Central Connecticut State University
   1615 Stanley Street
   New Britain, CT  06050

A.1 Agency Representative: Mr. Sal Cintorino
   Assistant  Chief Administrative Officer
   Central Connecticut State University
   1615 Stanley Street, East Hall
   New Britain, CT 06050

A.2 Project Coordinator: J. Pezo
   Construction Coordinator
   Central Connecticut State University
   1615 Stanley Street, East Hall
   New Britain, CT  06050
   Tel: 860/832-0180
   Fax: 860/832-2329

B. Project, STARBUCKS CAFE RENOVATION, ELIHU BURRITT LIBRARY - STATE
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1.02 COMMENCEMENT, DELAY AND COMPLETION OF THE WORK

A. The Contractor shall begin work under this Contract on the Project Start Date as indicated herein, and only after the Agency's issuance of a Purchase Order for the Project. In the event that the issuance of the Purchase Order is delayed for reasons beyond the control of the Agency, the Agency may issue a Letter of Intent to the Contractor indicating the Agency's desire to proceed with the project. The Contractor may elect to commence work upon receipt of said Letter of Intent, pending receipt of a formal Purchase Order from the Agency. In all cases, the Contractor shall complete all Work required by this Project within the time limits stated in the Form of Proposal.

B. Should the Contractor be denied a Workday, as specified in Article 1.34 of these GENERAL CONDITIONS, or delayed in the execution of the Contract by what the Contractor believes to be, a valid cause beyond its control, such as fire, rain, flood or other acts of God, the Contractor may submit a claim for an extension of the Project's Date of Substantial Completion. To receive consideration, each claim must be filed in writing, with a full statement of the reasons therefore, with the Project Coordinator, within seven (7) days of the occurrence of the delay.

1.03 COOPERATION OF TRADES

A. The Contractor shall be responsible for the control of the activities of its subcontractors. The Contractor hereby warrants that they shall consult, cooperate and coordinate with
one another and other general contractors requested by others and the Contractor shall lay out and install its work in a manner that will avoid any delays in, or interference with, the work of others. Any increase in the cost of, or delay in the Project incurred by the failure of the Contractor to insure the cooperation of its subcontractors, shall be borne by the Contractor.

1.04 PREVAILING WAGE RATES

A. On all new projects in excess of $400,000.00 and on all renovation or repair projects in excess of $100,000.00; the wages paid to any mechanic, laborer or workman employed upon the Work, herein contracted to be done, shall be equal to the rate of wages specified in the Schedule of Prevailing Rates a part of the "Minimum Rates and Classifications for Building Construction", specifically published for this Project by the State of Connecticut Labor Department. Should this Project be estimated to cost in excess of that specified above, a copy of the Schedule of Prevailing Wage Rates will be enclosed in the Purchasing Department Insert.

Each Contractor, who is awarded a contract on or after October 1, 2002, shall be subject to provisions of the Connecticut General Statues, Section 31-53, as amended by Public Act 02-69, "An Act Concerning Annual Adjustments to Prevailing Wages". These provisions should be used in determining bid price. Wage rates will be posted each July 1st on the Department of Labor website: www.ctdol.state.ct.us. Such prevailing wage adjustment will not be considered a matter for an annual contract amendment.

B. In the event it becomes necessary for the Contractor or any subcontractor to employ any mechanic, laborer or workman in a trade or occupation for which no minimum wage rate is set forth, the Contractor must immediately notify the Agency, who will ascertain the minimum applicable wage rate and thereupon notify the Contractor accordingly. The rate so determined will be applicable from the time of the initial employment of the person affected and during the continuance of such employment.

C. The Contractor shall submit to the Labor Department a properly executed "CONTRACTOR'S WAGE CERTIFICATION FORM", with a copy to the Agency, certifying the Contractor's compliance with the prevailing wage rates for this Project. A copy of said form is enclosed in the Purchasing Department Insert.

D. The Contractor shall, in accordance with Public Act 93-392, submit monthly to the Agency, a certified payroll and compliance statement on form FOW-CP 1 available from the Connecticut State Department of Labor, Regulation of Wages Division, 200 Folly Brook Boulevard, Wethersfield, CT 06109. The certified payroll and compliance statement shall be considered a public record, and every person shall have the right to inspect and copy such records in accordance with the provisions of Section 1-15 of the State's General Statutes. Federal certified payroll forms do not meet the requirements of this public act and are not acceptable.

E. The Contractor shall post, at a conspicuous point on the wall of the job trailer, or the Job Site(s); the schedule specifying all wage rates and authorized deductions, if any, from all wage categories required for this Project.
1.05 CONTRACTOR'S PAYMENT OBLIGATION TO SUBCONTRACTORS

A. The following section of the general statutes is inserted as information concerning the bonds furnished under Section 49-41 of the general statutes and under the Notice to Bidders section of the Project Manual:

1. Sec. 49-41a. Enforcement of payment by the General Contractor to subcontractor.

   a. When any public work is awarded by a contract for which a payment bond is required by Section 49-41, the contract for the public work shall contain the following provisions: (1) A requirement that the General Contractor, within thirty days after payment to the Contractor by the State or a municipality pay any amounts due any subcontractor, whether for labor performed or materials furnished, when the labor or materials have been included in requisition submitted by the Contractor and paid by the State or a municipality: (2) a requirement that the General Contractor shall include in each of its subcontracts a provision requiring each subcontractor to pay any amounts due any of its subcontractors, whether for labor performed or materials furnished, within thirty days after such subcontractor receives a payment from the General Contractor which encompasses labor or materials furnished by such subcontractor.

   b. If payment is not made by the General Contractor of any of its subcontractors in accordance with such requirements, the subcontractor shall set forth its claim against the General Contractor and the subcontractor of a subcontractor shall set forth its claim against the subcontractor through notice by registered or certified mail. Ten days after the receipt of that notice, the General Contractor shall be liable to its subcontractor for interest on the amount due and owing at the rate of one per cent per month.

   In addition, the General Contractor, upon written demand of its subcontractor, shall be required to place funds in the amount of the claim, plus interest of one per cent, in an interest bearing escrow account in a bank in this state, provided the General Contractor or subcontractor may refuse to place the funds in escrow on the grounds that the subcontractor has not substantially performed the work according to the terms of its or its employment. In the event that such General Contractor or subcontractor refused to place such funds in escrow, and the party making a claim against it under this section is found to have substantially performed its work in accordance with the terms of its employment in any arbitration or litigation to determine the validity of such claim, then such General Contractor or subcontractor shall pay the attorney's fees of such party.

   c. No payment may be withheld from a subcontractor for work performed because of a dispute between the General Contractor and another contractor or subcontractor.

   d. This section shall not be construed to prohibit progress payments prior to final payment of the Contract and is applicable to all subcontractors for material or labor whether they have contracted directly with the General Contractor or through another subcontractor.

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1.06 SUIT ON BOND

A. The following section of the General Statutes is inserted as information concerning the bonds furnished under Section 49-42 of the general statutes and under the Notice to Bidders section of the Project Manual:

1. Sec. 49-42. Suit on bond; when and how brought.

   a. Every person who has furnished labor or material in the prosecution of the work provided for in such contract in respect of which a payment bond is furnished under the provisions of Section 49-41 of the Connecticut General Statutes and who has not been paid in full therefor before the expiration of a period of ninety days after the day on which the last of the labor was done or performed by him or material was furnished or supplied by him for which claim is made, may enforce its right to payment under the bond by serving a notice of claim within one hundred eighty days after the date of which the Contractor performed the last of the labor or furnished the last of the material for which the claim is made, on the surety that issued the bond and a copy of the notice on the contractor named as principal in the bond. The notice of claim shall state with substantial accuracy the amount claimed, the name of the party for whom the labor was performed or to whom the materials were furnished and shall provide a detailed description of the bonded public project for which the labor or materials were provided. Within ninety days after service of notice of claim, the surety shall make payment under the bond and satisfy the claim, or any portion of the claim which is not subject to good faith dispute, and shall serve a notice on the claimant denying liability for any unpaid portion of the claim. The notices required under this section shall be served by registered or certified mail, postage prepaid in envelopes addressed to any office at which the surety, principal or claimant conducts its business, or in any manner in which civil process may be served. If the surety denies liability on the claim, or any portion thereof, the claimant may bring action upon the payment bond in the superior court for such sums and prosecute the action to final execution and judgment. An action to recover on a payment bond under this section shall be privileged with respect to assignment for trial. The court shall not consolidate for trial any action brought under this section with any other action brought on the same bond unless the court finds that a substantial portion of the evidence to be adduced, other than the fact that the claims sought to be consolidated arise under the same general contact, is common to such actions and that consolidation will not result in excessive delays to any claimant whose action was instituted at a time significantly prior to the motion to consolidate. In any such proceeding, the court judgment shall award the prevailing party the costs for bringing such proceeding and allow interest at the rate of interest specified in the labor or materials contract under which the claim arises or, if no such interest rate is specified, at the rate of interest as provided in section 37-3a upon the amount recovered, computed from the date of service of the notice of claim, provided, for any date of service of the notice of claim, such interest shall be computed from the date such portion became due and payable. The court judgment may award reasonable attorneys fees to either party if upon reviewing the entire record it appears that either the original claim, the
surety's denial of liability or the defense interposed to the claim is without substantial basis in fact or law. Any person having direct contractual relationship with a subcontractor but no contractual relationship express or implied with the contractor furnishing the payment bond shall have a right of action upon the payment bond giving written notice of claim as provided in this section.

b. Every suit instituted under this section shall be brought in the name of the person suing, in the superior court for the judicial district where the contract was to be performed, irrespective of the amount in controversy in the suit, but no such suit may be commenced after the expiration of one year after the day on which the last of the labor was performed or material was supplied by the claimant.

c. The word "material" as used in sections 49-41 to 49-43, inclusive, includes the rental of equipment used in the prosecution of work provided for in the Contract.

END OF THE GENERAL CONDITIONS
01006 THE ARCHITECT/ENGINEER – STATUS AND RESPONSIBILITY

A. CCSU Facilities Department is referred to in the Contract Documents as Architect, Engineer or Architects or by pronouns which imply them. As information for the Contractor, the Architect/Engineer’s status is defined as follows:

1. The Architect/Engineer will not make interpretations or decisions directly to the Contractor. Interpretations or decisions will be relayed through the Project Coordinator to the Contractor.

2. As an agent of the Agency, the Architect/Engineer is responsible for review of Shop Drawings, material and equipment intended for the Work, in accordance with the Contract Documents.

Wherever the Architect/Engineer is mentioned in the Documents in connection with an administrative function, it will include the Project Coordinator in that function.

01010 SUMMARY OF WORK


B. The Scope of the Work is defined by the Contract Documents, including labor and material. The Scope of Works includes, but will not be limited to the following:

Selective Demolition, concrete slab infill, metal fabrications, installation of Starbucks supplied casework, equipment and finishes, new HM frame, door and hardware set, aluminum storefront with sliding service window, gyp board walls, restore damaged existing ceiling and column enclosures to original condition in limited areas; floor and wall tiling, FRP paneling, painting, extension of existing plumbing and electrical system to accommodate food service equipment, installation of plumbing and lighting fixtures, modifications to existing fire alarm and existing Data Cabling Systems. See drawings for the other Scope of work items not listed here.
C. The Contractor will include in his bid, all items required in order to carry out the intent of the work as described, shown and implied in the Contract Documents.

D. It shall be the Contractor's responsibility upon discovery to immediately notify the Construction Administrator, in writing, of errors, omissions, discrepancies, and instances of noncompliance with applicable codes and regulations within the documents, and of any work which will not fit or properly function if installed as indicated on the Contract Documents. Any additional costs arising from the Contractor's failure to provide such notification shall be borne by the Contractor.

**01012 PROJECT DOCUMENTS**

A. The Specifications and Drawings describe and illustrate the materials and labor necessary for the Work of this Project.

B. The Contract Documents generally describe the materials, systems and procedures required to complete the Work. They are not inclusive and are meant to guide the Contractor in the prosecution of the Work.

C. The GENERAL CONDITIONS and SUPPLEMENTARY GENERAL CONDITIONS apply to each Section of the Specification. The Contractor will insure that each and every Subcontractor and Material Supplier is so informed. Additional provisions of the Specifications are supplementary, and in any case where general conditions are modified, remaining portions of the general article will remain in effect.

**01013 DOCUMENTS FURNISHED**

A. The Agency will provide *five (5)* sets of the Contract Documents for the Contractor's use. If more sets of the Contract Documents are required, the Contractor will bear all the costs incurred in their provision.

**01014 EXISTING CONDITIONS AND DOCUMENTS**

A. It is not the intent of the Contract Documents to show all existing conditions. All Bidders are required to examine the Site prior to submitting bids. Failure to do so will in no way relieve the Contractor from completing the Work as required.

B. The Contractor will make a pre-construction survey of the conditions of the Site and all adjacent areas in the vicinity of the Site which may reasonably be expected to be affected by the Work.

C. Prior to beginning the Work, the Contractor will advise the Architect/Engineer, in writing, of all existing conditions which may affect the Work.

D. Where existing objects or conditions are uncovered and exposed, subsequent to the
issuance of the Purchase Order, the Contractor and the Project Coordinator will jointly inspect these conditions and their findings will be recorded in writing by the Contractor. All corrective measures jointly agreed upon will be recorded in detail sufficient to prevent confusion and conflict at a later date.

E. The Contractor will proceed with the Work in these areas, taking into consideration these newly exposed conditions, and will adjust its working procedures to compensate for these conditions.

F. The Agency will make available for the Contractor's information, certain documents relating to the existing Site as it relates to the Work required under this Contract. These documents were not prepared for the purpose of providing information to the Contractor regarding the Work required by this Contract. They were prepared for other purposes, and do not form a part of this Contract. The Agency and the Architect/Engineer make no representation or guarantee as to, and will not be responsible for, their accuracy, completeness or pertinence and, in addition, will not be responsible for the conclusions to be drawn therefrom. They are made available to the Contractor as they exist, whether or not such information may be accurate, complete or pertinent or of any value to the Contractor. The Contractor must interpret all information shown according to its own judgement. The Contractor will conduct such investigations as the Contractor deems necessary to verify the information shown as it affects the Work.

01015 CONTRACTOR'S USE OF PREMISES

A. The Contractor will confine its operations to the immediate area of the construction site within the Contract Limit area as directed by CCSU. The Contractor will confine its storage of materials, supplies and equipment to the areas specified by the Project Coordinator.

B. “Plan of Use”: The Contractor shall prepare a “Plan of Use” for the Project which shall describe in detail the Contractor’s proposed use of the Site, both inside and outside the Contract Limit Area. The Contractor shall prepare the Plan of Use on a 1”=20’ scale plan of the Project Site. The Plan of Use shall include, but not be limited to the following: proposed vehicle and equipment access routes, scaffold and ladder locations, locations of proposed staging and storage areas, office trailer and dumpster locations, location of perimeter construction fencing and gates, other ground level protection measures around the building(s) (scaffold frames & planks), proposed pedestrian traffic flows around each building, proposed building access points, proposed protection measures for trees, shrubs and plantings. The Contractor shall submit the “Plan of Use” to the agency for approval within three (3) days of the issue of the PURCHASE ORDER, and Work on the Project shall not commence until an acceptable “Plan of Use” has been approved by the Agency. Any delay in the Project caused by the Contractor's failure to submit an acceptable “Plan of Use” shall not alter the Contractor's responsibility to complete the
Work in the specified number of calendar days as set for in the FORM OF PROPOSAL.

C. The Contractor will keep the Building(s) in a clean and orderly condition. The Contractor will keep the Building(s) accessible to Agency Maintenance Personnel at all times.

D. Existing walks, driveways, access routes to each building, adjacent lawn and parking areas are to be kept free of construction materials and debris for the Contract Term.

E. The Contractor will keep each roof area and surrounding premises clean and will pick up construction debris DAILY, and will comply with all requirements of Section 10569 "Cleaning".

F. The Contractor will move any stored products, under the Contractor's control, which interfere with the operations of the Agency. The Contractor will obtain and pay for the use of additional storage or work areas as needed to carry out the Contract.

1016 OCCUPANCY

A. Occupied Building: All work requiring jack hammering and or saw cutting and removal of the existing concrete slab as shown on the construction documents to be done after hours (the Library closes at 11:00 p.m.).

B. The Contractor will notify the Project Coordinator immediately of any operation likely to affect or interrupt a primary system in any building on campus.

01017 SUPERVISION

A. The Contractor will submit a resume for the proposed Project Superintendent and all other pertinent information required to obtain the Agency's written approval of the Project Superintendent. The Project Superintendent will be approved by the Agency and will be on the Site whenever scheduled or significant work is being performed. The Contractor will not change the Project Superintendent without the written consent of the Agency. The Project Superintendent will attend all scheduled project meetings. The Contractor will list "Field Supervision" as a separate line item on the Schedule of Values. The Agency reserves the right to withhold money from the Contractor's monthly Application for Payment for any unauthorized deviation from the full-time supervision requirement set forth above.

01018 EMERGENCY RESPONSE

A. The Contractor shall designate a 24-hour emergency contact person for the duration of
the project and shall provide the Project Coordinator with the name, address and telephone number of that individual. The individual, or firm, so named will respond within one (1) hour of an emergency call. The Contractor will be capable of rectifying any problem that pertains to the Work of this Project. The Contractor will have the authority to enter into a contract with other individuals as may be required to resolve the problem creating the emergency, to the satisfaction of the Agency's Representative at the scene of the emergency.

1. The Contractor will post the individual's name and telephone number and appropriate clarification of all emergency response procedures, in a waterproof transparent display, on the door of the Job trailer, and in the immediate vicinity of the current area(s) of work.

01019 ALLOWANCES

A. The Contractor will include in the Lump Sum Bid Proposal each Allowance stated in the Contract Documents. Items covered by Allowances will be supplied for such amounts and by such persons or entities as the Agency may direct.

B. The general provisions of the Contract Documents, including GENERAL CONDITIONS and GENERAL REQUIREMENTS, apply to each listed Allowance item.

C. Unless otherwise provided in the Contract Documents:

1. Materials and equipment under the Allowance will be selected promptly by the Agency to avoid delay in the Work.

2. Allowances will cover the cost to the Contractor of materials and equipment delivered to the site and all required taxes, less applicable trade discounts.

3. The Contractor's costs for unloading and handling, labor, installation costs, overhead and profit and other expense related to the Allowance item will be included in the Lump Sum Bid Price and not in the Allowance.

4. The Contractor will insure that the Work performed under the Allowance section is complete and operable in every respect.

5. If the actual cost of an Allowance item is more or less than the given amount, the Contract Sum will be adjusted by a Change Order.

E. Schedule of Allowances:

1- Modifications to the existing Data Cabling System. $4,000.00
Vendor: Mercury Cabling System LLC. 300 Avon Street Stratford CT 06615. Phone: 203-590-5029. Contact person Matt Tryon

Summary Scope of work: Install two new CAT 6 Cable locations at point of sale locations. General Contractor to provide 2" conduit from IT room to column adjacent to new Starbucks. Pathways to run down in column enclosure into under slab conduit to each point of sale location. Conduit pathways by General Contractor.

2. Modification to existing Fire Alarm System and Programming: $4,000.00

Vendor: TPC Associates, Inc. 261 Pepe’s Farm Road; Milford, CT 06460 Phone 203-878-1321

Summary Scope of Work: Provide and install three strobes and one heat detector. Provide all required programming and power supplies required. Pathways to new devices to be run down column enclosure into under slab conduit into new walls. Conduit pathways by General Contractor.

3. Paper Towel and soap dispenser: $1,000.00

Summary Scope of Work: Provide One Georgia Pacific 56650/01 Combination C-fold/multifold towel dispensers and one 56640 Countertop Dispenser for Folder Paper Towels and One Gamco G-58AP soap dispenser. To be mounted by General Contractor.

4. Exterior illuminated signage: $6,000.00

Vendor: Gable Signs & Graphics. 7440 Fort Smallwood Road; Baltimore, MD 21226 Phone 410-255-6400

Summary Scope of Work: Provide for General Contractor installation Two exterior 2'-0" dia. LED illuminated Starbucks signs.

5. Door Lockset: $1,200.00

Vendor: Richard Fox, Environmental Systems Corporation, 18 Jansen Court, West Hartford, CT 06110 Phone: 860-953-8800

Summary Scope of Work: Provide one Persona Passport 1000 P2 cylindrical lockset. General Contractor to prep door "standard 161 prep". Turn over lockset to CCSU locksmith to key and install in door.
01020  EMERGENCY REPAIRS

A. Should the individual designated for emergency response in the above article fail to respond in the specified period of time, or fail to effect adequate repairs in a timely manner, the Project Coordinator may take whatever action necessary to alleviate the problem, repair any damage incurred and/or clean up the immediate and adjacent areas. The cost of the corrective measures specified above, including the Agency Representative's or Coordinator's time and expenses, will be billed directly to the Contractor. Should the Contractor not bear the cost of these measures, they will be assigned to the Project and its Contract Sum will be reduced by that amount.

01030  SUPPLEMENTAL BIDS

Not Applicable

01040  COORDINATION

A. The Contractor will coordinate the Work of the several trades to assure the efficient and orderly sequence of installation of construction elements.

B. The Contractor will verify that characteristics of interrelated equipment are compatible. The Contractor will coordinate work of various Sections having interdependent responsibilities for installing, connecting and placing equipment in service.

C. The Contractor will coordinate space requirements and installation of mechanical work; follow routing shown for pipes, ducts and conduits as closely as practicable; make runs parallel with lines of building; use spaces efficiently to maximize accessibility for other installations and for maintenance repairs.

D. The Contractor shall coordinate work to avoid interruption or interference to any utility line servicing any building on campus.

E. See also Article 1.03 of the GENERAL CONDITIONS.

01045  CUTTING AND PATCHING

A. Openings and chases may not be shown on the Drawings. It is the responsibility of the Contractor to examine the Drawings and to provide openings where needed.

B. The Contractor will install sleeves, inserts and hangers furnished by the trades needing same.

C. After installing work into openings, the Contractor will close same. If finishes are to be
restored, the new work will match the original and will be done by the trade customarily responsible for the particular kind of work.

D. The Contractor will obtain permission from the Project Coordinator before cutting beams, arches, lintels or other structural members.

E. The Contractor will perform all cutting and patching to integrate elements of work, uncover ill-timed, defective and non-conforming work. The Contractor will provide necessary penetrations of existing surfaces, seal penetrations through floors, walls, ceilings and roofs, as applicable and restore or preserve fire-rated and smoke barrier construction. Construction and finishes will match original work. The Contractor will provide any necessary samples for testing.

01050 SURVEY/LAYOUT AND RECORD DOCUMENTS DURING CONSTRUCTION

A. Survey/Layout: The Contractor will retain the services of a Land Surveyor, duly registered in the State of Connecticut, acceptable to the Architect/Engineer and to the Project Coordinator, to set the Contract Limit Lines, Project Base Line(s), Bench Mark(s) and any and all other controls required to construct this Project in accordance with the Contract Documents. The Land Surveyor will also perform all (tunnel and underground utility) layout and all as-built survey work and recording as required herein.

B. Record Drawings during Construction:

1. Contract Documents: The Contractor will maintain at the Site, one copy of the Contract Documents, Addenda, approved Shop Drawings, Change Orders, etc., in good order, with up-to-date project information. The Contract Documents will be available to the Architect/Engineer and Project Coordinator at all times.

2. Record Drawings: The Contractor will maintain at the Project Site one set of the Contract Documents which will be entitled "Record Drawings", on which the Contractor will record any and all changes to the Contract Documents, as soon as they occur. The Record Drawings will be updated on a weekly basis, at a minimum, and will be available to the Architect/Engineer and Project Coordinator at all times. The Contractor will carry a separate line item for "Record Drawings" on the Schedule of Values. The Contractor's failure to update the "Record Drawings" will result in a reduction in the Contractor's monthly Application for Payment.

3. Record Survey: Not applicable.

01052 DIMENSIONS AND MEASUREMENTS

A. The Contractor and each Subcontractor will verify all new and existing dimensions for all built-in work and/or work adjoining that of other trades, before ordering any material or
doing any work. They will be responsible for the correction of all dimensions found to be in error. Any discrepancy in dimensioning will be submitted, in writing, to the Project Coordinator for transmittal to the Architect/Engineer for its consideration, before proceeding with the Work.

01054  CONSTRUCTION STAKES

A. The Contractor will satisfy himself regarding the accuracy of the base lines, bench marks, etc. established by the Land Surveyor. The Contractor will protect all such stakes and or marks as required to hold them free from damage or displacement, until they are needed or to the Date of Substantial Completion.

01056  CALL BEFORE YOU DIG"

A. The Contractor will notify "Call Before You Dig" at 1-800-922-4455 at least three (3) full working days before any proposed excavation activity. The Contractor will provide the Project Coordinator with written evidence of a Dig Number and Start Date prior to commencing any excavation work. The Agency's "Call Before You Dig" representative is Jose Pezo, Tel: 860-832-0180, Fax: 860-832-2329.

B. The Contractor will have full responsibility for maintaining and protecting original utility mark-outs and for periodically notifying "Call-Before-You-Dig" in accordance with state requirements. Should the Contractor require additional mark-out as a result of the Contractor's failure to adequately protect the original marks-outs, the Agency will provide that service as a backcharge to the Contract.

01090  STANDARDS, CODES AND SPECIFICATIONS

A. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. References to standard specifications and codes refer to the editions current at the Bid Due Date. References include their addenda and errata, if any, and will be considered a part of these specifications as if they were printed herein in full.

C. The manufacturers' standard warranties or guarantees will apply when their products are used on this project.

01095  SUBCONTRACTOR LIST

A. Upon request by the Agency, the Contractor will submit a list of all Subcontractors on the
Project, including all Subcontractors previously listed during the Bid Phase. The Contractor will include the following information for each Subcontractor: a) company name & address; b) telephone and fax numbers; c) contact person; d) division section; e) subcontract amount; f) trade license number; g) Federal Employer Identification Number and h) SBE, MBE or WBE status.

01100 SPECIAL PROJECT PROCEDURES

All work regarding jack hammering and or saw cutting and removal of the existing concrete slab as shown on the construction documents to be done after hours (the Library closes at 11:00 p.m.)

01121 SALVAGEABLE MATERIALS/REUSE OF EXISTING MATERIAL

A. All items on the plans to be removed will become the property of the Contractor.

B. Except as specifically indicated or specified, materials and equipment removed from the existing Work Site will not be used in the completed work.

01210 PRECONSTRUCTION CONFERENCE

A. The Architect will organize a Pre-construction Conference and notify the parties concerned.

01220 PROJECT MEETINGS

A. Scheduled Project Meetings will be held once (1) each week during the construction of this Project, unless otherwise specified by the Architect/Engineer. The day and time of these meetings will be determined by mutual agreement of the parties in attendance. If a time and date cannot be agreed upon, the Project Coordinator will establish them. Meetings will commence seven (7) calendar days from the issue of the Purchase Order and terminate the week of the Substantial Completion of this Project. Attendance at these meetings by the Contractor's Project Manager and Construction Supervisor is mandatory. Meetings will be held in the Temporary Office Trailer, or a location approved by the Architect/Engineer.

B. Special Project Meetings may be called by any regular attendee of Scheduled Meetings, upon issue of two (2) days written notice. The parameters specified above for Scheduled Meetings will apply hereto.

C. Minutes of the above meetings will be produced by the Project Coordinator and distributed to all parties.
01340  **SHOP DRAWINGS**

A. The Contractor will forward, after detailed checking in its office, with a transmittal letter, **six (6)** prints of each Shop Drawing and/or Product Data Sheet to the Architect/Engineer for review, and **one (1)** set of each to CCSU within **seven (7) days** of receipt of same.  

B. The submittals specified herein will show all the work in detail. Product data submittals will be edited and all data irrelevant to this Project and its conditions will be eliminated. Details will be drawn to a scale of $1\frac{1}{2}'' = 1'-0''$ or larger.  

C. The Contractor will review the Shop Drawings, stamp with its approval and submit them in orderly sequence so as to cause no delay in its work or in the work of any Subcontractor. Shop Drawings will be properly identified regarding the Specification Section and article, material and Project. At the time of submission, the Contractor will inform the Architect/Engineer, in writing, of any deviation in the Shop Drawings from the requirements of the Contract Documents.

D. The Architect/Engineer will review Shop Drawings for conformance with the design concept of the Project, and will return corrected and/or approved Shop Drawings to the Contractor within **seven (7) days** of the receipt of same.  

E. The Contractor will make any corrections required by the Architect/Engineer. The Contractor will resubmit the specified number of corrected copies of the Shop Drawings until accepted by the Architect/Engineer. 

F. The Architect/Engineer’s review of a Shop Drawing submittal will in no way relieve the Contractor of its responsibility in fulfilling the letter and the intent of the Contract Documents.

G. When the Shop Drawing review process has been satisfactorily completed, the Contractor will provide a total of **six (6)** prints of each Shop Drawing to the Architect/Engineer for distribution and filing. The Architect/Engineer will retain **two (2)** sets of each submittal for its files, return **three (3)** sets to the Contractor and **one (1)** set to the Agency, with a transmittal letter.  

H. **Long Lead Time Items**: It is the responsibility of the Contractor to ensure that all materials, products, etc. required for the Project are ordered in a timely manner so as not to delay its work or that of any Subcontractor. Long Lead Time Items will be reviewed in the same way as other items as described above.

01341  **SAMPLES**

A. Submit Samples of all items so specified.  

B. Legibly mark all Samples as follows:
1. Name or trade, type, quality or grade and any further designation required to identify the item.

2. Manufacturer or fabricators name, address and telephone number.

3. Contractor and Subcontractor's name, person to contact, address and telephone number.

4. Project name and designation.

C. Submit Samples of sufficient size and in sufficient numbers to clearly show the quality, type, range of color, texture of the surface and other important features of the item.

D. All materials, fabrications and equipment provided for the Project will be as specified, identical to the Samples submitted.

01380  CONSTRUCTION PHOTOGRAPHS

A. The Architect/Engineer may take progress photographs at any time during the construction process. The Contractor will, at all times, allow unobstructed access to the Work for this purpose.

01400  QUALITY CONTROL

A. Comply with manufacturers' and association or trade instructions and specifications for storage and use of their products.

B. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with the Contract Documents, request clarification from the Architect/Engineer before proceeding.

C. When specified, require manufacturer to provide qualified personnel to observe field conditions, installation, quality of workmanship and to test, adjust and balance equipment, as applicable.

D. Where required by the Specifications, submit certificates to the Architect/Engineer, executed by a responsible officer of the manufacturer, warranting that product meets or exceeds specified requirements.

01511  TEMPORARY ELECTRICITY AND LIGHTING

A. The Contractor may take electrical power and lighting from the nearest available outlets or panels on the Site. The Contractor will comply with all applicable codes that govern electrical usage or distribution on the Site.
B. The Agency will pay the cost of the electricity used. The Contractor will take measures to conserve electrical usage. If the Contractor's demand proves to be a hardship, the Agency reserves the right to terminate its provision of electrical power, or to measure the quantity of electrical energy provided and to charge the Contractor for its consumption at 1.2 times the cost to the Agency.

01513 TEMPORARY HEAT
A. N/A

01514 TEMPORARY TELEPHONE
A. N/A

01515 TEMPORARY WATER
A. N/A

01516 TEMPORARY SANITARY FACILITIES
The Contractor can use restrooms within the Elihu Burrit Library building ONLY.

01518 FIRE PROTECTION
A. The Contractor will assume all responsibility for loss or damage by fire to the Site, until the substantial completion of this Project. No flammable or explosive materials will be stored on the Project Site at any time. The Contractor will assign a responsible employee to be in charge of fire protection measures.

01520 CONSTRUCTION EQUIPMENT
A. The Contractor will furnish and maintain, at its own expense and risk, all tools, apparatus and appliances necessary to insure the timely, convenient and safe execution of this Contract. All the above will comply with applicable OSHA requirements and all other applicable codes, rules, regulations and statutes, including compliance with the requirements of the current edition of the "Manual of Accident Prevention in Construction" published by The Associated General Contractors of America, and the standards of the State Labor Department.

01535 PROTECTION
A. Safe Work Environment: The Contractor shall cooperate with the Owner in creating a safe work environment for workers, building occupants and members of the university community during all construction operations. The Contractor shall employ work practices and safety measures in accordance with standards established by U.S.
Department of Labor, Occupational Safety and Health Administration (OSHA), National Fire Protection Association (NFPA), State and Local Building Codes, and the Department of Health. The Contractor shall maintain safe and protected means of egress to the buildings at all times and shall protect adjacent walkways, as required, to provide for the safe flow of pedestrian traffic around each building.

B. The Contractor shall enroll in the onsite Safety and Health Consultation Program offered by the Connecticut Occupational Safety and Health Administration located with the Connecticut Department of Labor, 200 Folly Brook, Wethersfield, CT.

C. See Section 18 in the Contract Draft document.

01540 SECURITY

A. The Contractor will be solely responsible for the protection and safekeeping of products stored or installed under this Contract until the Date of Substantial Completion of the Project.

B. The Contractor will be solely responsible for damage, loss or liability due to theft or vandalism. The Contractor will bear full responsibility for the protection and safekeeping of products stored on site under this contract.

01550 TRAFFIC WAYS

A. The Contractor may use on-site paved roads and parking areas, as approved by the Agency, but will not block, encumber or otherwise obstruct the same. Public roadways will not be blocked by standing trucks, parked cars, material storage, construction operations or in any other manner. The Agency will designate an area(s) within or outside of the Contract Limit Lines in which construction vehicles, dumpsters, etc may be located.

B. The Contractor will keep public roads and existing paved roads, drive and parking areas on the Agency's property, free of scrap or debris due to construction operations. The Contractor will repair, at the Contractor's expense, any damage to the surface of the roadways caused by the Contractor's construction operations.

C. If the Work of the Contract affects public use of any street, road or highway, the Contractor will confer with the police authority having jurisdiction to determine if and how many police are needed for public safety in addition to any barriers and signals that may be needed. The Contractor will be responsible for payment of any required police or traffic control services.

01560 TEMPORARY CONTROLS
A. During the progress of the Work, the Contractor will conduct its operations and provide adequate pollution controls to minimize the creation and dispersion of noise, odors, dust, dirt and/or mud within and beyond the Site. The controls will be implemented to the satisfaction of the Project Coordinator, to the extent required to assure the Agency's continued use of its facilities.

B. Should the Agency's use of its facilities be denied or interrupted by the Contractors not providing adequate controls, as specified above, the Contractor will be required to cease operations until adequate controls are provided. All costs incurred in such a cessation of operations will be born by the Contractor. No extension of time will be granted due to such a cessation in operations.

01569 CLEANING

A. The Contractor will keep the Site clean, free from excessive soiling, staining, the excessive accumulation of debris and other substances and conditions that, in the opinion of the Architect/Engineer, or the Construction Coordinator, are detrimental to the safety of the public and the appearance of the Site. The Contractor will employ whatever cleaning measures are required to achieve the above. They will include, but are not limited to, the following:

1. Remove and legally dispose of off-site all items scheduled for demolition and removal. Stockpiling of demolition items within or outside the Contract Limit Lines is prohibited.

2. Maintain all areas under the Contractor's control free of waste, debris and rubbish.

3. Remove waste, debris and rubbish from the Site daily and legally dispose of off-site. Maintain the Site in a clean and orderly condition.

4. Provide on-site containers for the collection of waste materials, debris and rubbish. USE OF AGENCY WASTE CONTAINERS, COMPACTORS, DUMPSTERS AND TRASH RECEPTACLES IS PROHIBITED.

5. Remove debris and rubbish from closed or remote spaces prior to closing the space.

6. Periodically clean interior building areas until Substantial Completion.

01580 PROJECT SIGN

A. **Not Required**
FIELD OFFICES AND SHEDS

A. **NOT Required** - Contractor can use one of the rooms in the building as an office.

PARKING PERMITS

A. Parking is by permit only. The Contractor will meet with a representative of the Agency’s Police Department to arrange for parking permits for all construction personnel, including Subcontractors and employees of Subcontractors. **Parking will be permitted in the designated areas as determined by the CCSU Police Department.** Vehicles without permits will be ticketed, tagged and towed at the vehicle owner’s expense. Parking will not be permitted in front of the building.

RESTRICTIONS

A. **Weapons or Intoxicants:** No person employed on this Project will bring intoxicants or any type of weapons onto the Campus.

B. **Fraternization or Harassment:** The Contractor is advised to avoid personal contact and fraternization with facility occupants and the general campus population.

MATERIAL AND EQUIPMENT

A. Material and equipment incorporated into the Work will conform to applicable specifications and standards and comply with size, make, type and quality specified.

B. For manufactured and fabricated products:

1. Design, fabricate and assemble in accordance with the best engineering and shop practices.

2. Manufacture like parts of duplicate units to be standard sizes and gages, to be interchangeable.

3. Two or more items of the same kind will be identical, by the same manufacturer.

4. Products will be suitable for service conditions.

5. Equipment capacities, sizes and dimensions shown or specified will be adhered to, unless variations are specifically approved in writing.

C. Do not use material or equipment for any purpose other that for which it is designed or is specified. All material, equipment and product will be fit for their intended purpose.

D. Architect will consider requests for Substitutions only within 15 days after date established in Notice to Proceed. Substitutions may be considered when a product
becomes unavailable through no fault of the Contractor. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents. A request constitutes a representation that the Contractor:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
2. Will provide the same warranty for the Substitution as for the specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse Owner for review or redesign services associated with re-approval by authorities.

E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

F. Substitution Submittal Procedure:

1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
2. Submit shop drawings, product data and certified test results attesting to the proposed product equivalence.
3. The Architect will notify Contractor, in writing, of decision to accept or reject request.

01604 MANUFACTURER'S INSTRUCTIONS

A. When the Contract Documents require that installation of any part of the Work will comply with manufacturer's printed instructions, the Contractor shall obtain and distribute copies of such instructions to parties involved in the installation, including one copy to the Architect/Engineer.

1. Maintain one (1) complete set of instructions at the job Site during installation and until the Date of Substantial Completion.

B. Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions, and in conformity with specified requirements.
1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with the Architect/Engineer for further instructions.

2. Do not proceed with the Work without clear instructions.

C. Perform all Work in accordance with the manufacturer's instructions. Do not omit any preparatory step or installation procedure unless it is specifically modified or deleted by the Contract Documents.

01610 TRANSPORTATION AND HANDLING

A. Materials and equipment will be delivered, stored and handled to prevent intrusion of foreign matter and damage by weather or breakage. Packaged materials will be delivered and stored in original, unbroken packages.

B. The contractor shall promptly inspect shipments to assure that products comply with requirements, that quantities are correct and products are undamaged.

C. Packages, materials and equipment showing evidence of damage will be rejected and replaced at no additional cost to the Agency.

01620 STORAGE AND PROTECTION

A. Store products in accordance with the manufacturer's instructions with seals and labels intact and legible. Store sensitive products in watertight enclosures. Maintain within temperature and humidity range required by the manufacturer.

B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.

C. Store loose granular material on solid surfaces in a well-drained area; prevent mixing with foreign matter.

D. Arrange storage to provide access for inspection. Periodically inspect to insure products are undamaged and are maintained under required conditions. Keep log showing date, time and problems, if any.

E. Stone, masonry units and similar materials will be stored on platforms on dry skids and will be adequately covered and protected against damage.

F. Provide substantial coverings, as necessary, to protect installed products from traffic and subsequent construction operations. Remove when no longer needed.
01710  FINAL CLEANING AND SITE RESTORATION

A. The Contractor, within one (1) week of the inspection required to establish the Substantial Completion of the Project, or any portion thereof, will perform a final cleaning of all Work. The Contractor will leave the Project clean and ready for occupancy. If the Contractor fails to perform a final cleaning to the satisfaction of the Architect/Engineer and the Project Coordinator, the Agency may do so, and the cost thereof will be charged to the Contractor.

B. This final cleaning will be complete in every manner, including but not limited to, the following:

1. The removal of all defacements both new and existing including, but not limited to, graffiti, putty, paint and adhesive residue, streaks, stains, finger prints, erection marks and construction notes.

2. The cleaning of all metal surfaces.

3. The cleaning of all outside areas including building surfaces (brick walls, window panes, frames and sills), sidewalks, roads and grass areas.

4. The cleaning of exposed and accessible concealed surfaces of the Project, including but not limited to walls, ceilings, carpeted surfaces, concrete flooring, mechanical and electrical fixtures, built-in equipment, etc.

5. Flooring: Follow flooring manufacturer's initial cleaning procedure to remove any factory coating which acts as a protective layer against dirt during construction work. Apply manufacturer's recommended finish to prepare floor for occupancy.

C. Site Restoration: The Contractor will restore all grass areas, sidewalks and paved areas damaged or destroyed by construction operations in accordance with Agency Standards.

01720  PROJECT RECORD DOCUMENTS

A. “As-Built Drawings”: Not applicable

B. “Record Survey”: Not applicable

C. “Campus Master Survey Map”: Not applicable.

D. “Data Base Building Plan(s)”: Not Applicable

01730  OPERATIONAL AND MAINTENANCE DATA
A. Submit **two (2) sets** of Operational Manuals of each of the Project’s systems in 3-ring loose-leaf binders, properly marked and indexed. Delete and remove from the manual all information not relevant to the purpose of the manual. Submit the above to the Architect/Engineer for approval, with all additional information that the Architect/Engineer may request and considers necessary for the proper servicing and maintenance of all equipment. The quality of all copies will be subject to approval by the Architect/Engineer.

B. Manuals will include, but will not be limited to the following:

1. **Operating Procedures**:
   a. Typewritten procedures indicating each mode of operation of each piece of equipment or system. Procedures will indicate the status of each component of a system in each operation mode.
   b. Procedures will indicate names, symbol numbers, valve tags, circuit numbers, schematic control and wiring diagrams, locations of thermostats, manual starters, control cabinets and other controls of each system.
   c. Emergency shut-down procedures for each piece of equipment in each system, both automatic and manual, as appropriate.

2. **Maintenance Schedule**:
   a. Provide a typewritten schedule describing the manufacturer’s recommended schedules of maintenance and a specification of those maintenance procedures.

3. **Catalog Cuts and Shop Drawings**:
   a. The catalog cuts will clearly indicate the exact model and type of each piece of equipment installed in the Project, including all options provided.
   b. The catalog cuts will fully describe equipment, including physical, performance, electrical, mechanical and other characteristics. They will also include installation or erection diagrams.
   c. The catalog cuts will indicate spare parts numbers and the name, address and phone number of the manufacturer, and the name, address and phone number of the manufacturer’s local representative or service department.

4. Provide a typewritten list of all Subcontractors on the Project, including the name, address and phone number of all local representatives or service departments.

5. All manuals will be indexed, with dividers separating each system or piece of equipment.
A. The Contractor will orient and instruct maintenance personnel, designated by the Agency, in the operation of all equipment. The date and time of the meeting will be mutually agreed upon. The Contractor will provide qualified instructional personnel for as long as necessary, to fully orient and instruct those designated.

01740 WARRANTIES AND GUARANTEES

A. The Contractor will guarantee all materials and warrant all workmanship for a period of one (1) year from the Date of Substantial Completion of the Project. Provide extended guarantees and warranties as specified in the Contract Documents, as per attached form.

B. Form of Guarantee/Warranty: See Appendix C in APPENDICES.

C. All required bonds will be by their respective Surety Companies, made out to Central Connecticut State University.

D. All guarantees/warranties or bonds supplied by Subcontractors, Installers, Suppliers or Manufacturers will be countersigned by the General Contractor.

01800 CONFINED SPACE ENTRY

A. Confined Space Entry: The Agency has established a permit-required, confined space entry program. Confined spaces that affect the Work of this Project, will be defined in accordance with the requirements of OSHA, 29 CFR 1910.146 Appendix A and the Agency's confined Space Entry Plan. In the event that the Contractor must perform work within a permitted "confined space" as defined by federal OSHA regulations or by the CCSU "Confined Space Entry Plan", the Contractor will comply with all safety and monitoring requirements imposed by OSHA and by the "CCSU Confined Space Entry Plan" relative to work within the permitted confined space.

B. All proposed entries must be reviewed and approved, in advance, by the Agency's Environmental Health and Safety Compliance Officer, Mr. Domenic Forcella, telephone number (860) 832-2499, prior to the Contractor's entry into a permitted confined space.

C. All such compliance measures will be at the Contractor's expense and performed with the Contractor's own equipment. The Agency reserves the right to suspend the Contractor's operations for any violation of the above-mentioned confined space regulations.

01805 OSHA TRAINING

A. (Effective October 1, 2006) Public Act 06-175 (a) Each contract entered into on or after July 1, 2007, for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public building project by the state or any of its agents, or by
any political subdivision of the state or any of its agents, where the total cost of all work to be performed by all contractors and subcontractors in connection with the contract is at least one hundred thousand dollars, shall contain a provision requiring that, not later than thirty days after the date such contract is awarded, each contractor furnish proof to the Labor Commissioner that all employees performing manual labor on or in such public building, pursuant to such contract, have completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, in the case of telecommunications employees, have completed at least ten hours of training in accordance with 29 CFR 1910.268.

01810 OSHA COMPLIANCE/AIR-BORNE PARTICLES

A. Lead Paint: Not Applicable
B. Asbestos: Not Applicable

END OF SECTION
BUILDING CONTRACTOR REPORTING FORM
In order to receive final payment for services, all general contractors and their subcontractors must supply the information requested on this form and submit these form(s) with their final invoice (P.A. 93-288). Please duplicate this form and submit one for each contractor/subcontractor.

1. CENTRAL CONNECTICUT STATE UNIVERSITY – 7802

Project Title: STARBUCKS CAFE RENOVATION
ELIHU BURRITT LIBRARY

Project Number: STATE PROJECT # N/A; CCSU PROJECT #22-89

Purchase Order #: 

2. Federal Employer Identification Number:
If FEIN Number is not available, provide Social Security Number.
Social Security Number:
If neither field is completed, please check the appropriate reason:

1. Refused to supply FEIN _____  3. Not a U.S. citizen _____
2. FEIN has been applied for _____  4. Other reason _____

3. Connecticut Tax Registration Number:

4. Type of Work:  Goods or Services Contract  Construction Contract

5. Name of Business:

6. Business Address:  Street/PO Box
City  State  Zip Code
Telephone Number: (_______) 

7. Remittance Address (If different):  Street/PO Box
City  State  Zip Code

8. Business Listed Above is:  General Contractor  Subcontractor

9. Name of Person Completing Form:

STARBUCKS CAFE RENOVATION
ELIHU BURRITT LIBRARY
CCSU PROJECT NO: 22-89
January 27, 2016; 1 of 1
CERTIFICATE OF COMPLIANCE

AGENCY: Central Connecticut State University
ADDRESS: 1615 Stanley Street, New Britain, CT  06050

COMMISSIONER or AUTHORIZED REPRESENTATIVE: Sal Cintorino
Assistant Chief Administrative Officer

PROJECT TITLE: Strabucks Cafe Renovation - Elihu Burritt Library
PROJECT NUMBER: STATE PROJECT # N/A; CCSU PROJECT #22-89

PART “A” – DESIGN (Before bidding and when applicable for Building Permit):
THIS IS TO CERTIFY THAT to the best of my knowledge, information and belief the above-described project has been designed in substantial compliance with requirements of the State of Connecticut Basic Building Code and all other applicable codes as required by Chapter 541, Connecticut General Statutes.

Commissioner or Authorized Representative: (Signature) Date:

Architect/Engineer: (Signature) Date:

Registration Number:

PART “B” – CONSTRUCTION COMPLETION (Prior to Agency Occupancy):
THIS IS TO CERTIFY THAT to the best of my knowledge, information and belief the above-described project was built in accordance with the plans and specifications and approved change orders, and is in substantial compliance with all applicable codes as required by Chapter 541, Connecticut General Statutes.

Architect/Engineer: (Signature) Date:

Registration Number:

General Contractor: (Signature) Date:

(Below signature required for projects only when NOT exceeding threshold limits)

Commissioner or Authorized Representative: (Signature) Date:

cc: DPS/OSBI, A/E, General Contractor, Agency File
Guarantee/Warranty  
Central Connecticut State University  
1615 Stanley Street  
New Britain, CT 06050

STARBUCKS CAFE RENOVATION - ELIHU BURRITT LIBRARY

State Project Number: N/A

CCSU Project Number: 22-89

I (We) hereby guarantee (or warranty) the ______________________________

______________________________________ work on the Project referenced above

for a period of _____________ year(s), from the Date of the Substantial Completion of

the Work, _____________, 20____ against failures of workmanship and

materials, in accordance with the requirements of Section ____________, Page

_________ Paragraph(s) ________, of the Contract Specifications.

Signed:

(By Authorized Agent)

(Typed or Printed Name)

Title:

Date:
CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT NAME: STARBUCKS CAFE RENOVATION - ELIHU BURRITT LIBRARY

DATE OF SUBSTANTIAL COMPLETION:

STATE PROJECT NUMBER: N/A

CCSU PROJECT NUMBER: 22-89

CONTRACTOR:

Name
Address

ENTIRE PROJECT OR DESIGNATED PORTION THEREOF:

TO WHOM IT MAY CONCERN:

The Date of the Substantial Completion of the Project, or designated portion thereof, is hereby defined as the date certified by the project Architect/Engineer as the date when construction is sufficiently complete, in accordance with the Contract Documents, so that the Agency can occupy or utilize the Project, or designated portion thereof, for the use for which it is intended.

You are advised that the above referenced Project, or designated portion thereof, is substantially complete and ready for use, [except for the items listed on the attached PUNCH LIST dated ___________.] All guaranty and warranty periods shall commence on the Date of Substantial Completion specified above.

The Project, or designated portion thereof, is hereby returned to the possession of the Agency effective on the date of Substantial Completion, subject to the following conditions:

1) It is understood that the Agency’s use of the Project, or designated portion thereof, in no way constitutes acceptance of any defective item specified in the [Inspection Report(s) dated ___________, OR Final Inspection Report, or final acceptance of the Project.] The failure to include any item in the Report does not alter the responsibility of the contractor to complete all the Work in accordance with the Contract Documents.

2) The Agency hereby assumes full responsibility for the proper maintenance of and for any and all damage to the Project, or designated portion thereof.

STARBUCKS CAFE RENOVATION
ELIHU BURRITT LIBRARY
CCSU PROJECT NO: 22-89
January 27, 2016; 1 of 2
3) The Agency shall grant free access to the Contractor, or his agent, for the purpose of completing any unperformed and/or corrective work that may become necessary.

[The cost of this Project is $______________ to date.] OR [The total cost of this Project has increased from $______________ to $______________].

The Agency’s Business Office is requested to provide any necessary insurance coverage required to fully cover the facilities effective on the date of Substantial Completion specified above.

DEPARTMENT OF PUBLIC WORKS:  
(Date)  
Not Applicable

FOR THE CONSULTANT:  
(Date)

FOR THE CONTRACTOR:  
(Date)

CCSU COORDINATOR:  
(Date)

CCSU FACILITIES MANAGEMENT:  
(Date)

Original: Office of the University Architect, (file)  
Cc: Associate Chief Administrative Officer  
________________, Consultant  
________________, Contractor  
Business Office, CCSU  
Project File
**APPENDIX E**

**CCSU - CONTRACTOR CHANGE ORDER PROPOSAL WORKSHEET**

<table>
<thead>
<tr>
<th>General</th>
<th>Change Order Proposal No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor:</td>
<td>Date:</td>
</tr>
<tr>
<td>Company Name ( Typed or Printed)</td>
<td>Project</td>
</tr>
<tr>
<td></td>
<td>Name:</td>
</tr>
</tbody>
</table>

**COP Description:**

**DPW Project No:**

**CCSU Project No:**

### Section 1

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit</th>
<th>Description of Material and Equipment</th>
<th>Unit Cost</th>
<th>Lump Sum Cost</th>
<th>Insert &quot;X&quot; If Credit</th>
<th>(Quantity x Unit Cost OR Lump Sum) Total</th>
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</tbody>
</table>

### Section 2

<table>
<thead>
<tr>
<th>Labor Classification</th>
<th>No. of Workers</th>
<th>Total Hours</th>
<th>Base Rate Per Hour</th>
<th>Taxable Benefits Per Hour (Cash)</th>
<th>Non-Tax. Benefits Per Hour (Plan)</th>
<th>Gross Pay for Prevailing Rate Job (D +E) x C</th>
<th>Total Cost Per Hour D + E + F</th>
<th>Insert &quot;X&quot; If Credit</th>
<th>Total Hourly Labor Cost C x H</th>
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<tbody>
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### Section 3

**Taxes on Labor**

- Social Security Tax:
  - Federal: %
  - CT: %
  - Fed. Unemployment Tax: %
  - CT Unemployment Tax: %

**Workmen’s Compensation Insurance**:

% $ Total % x Total Col G Sec 2: Cost $%

### Section 4

**Overhead and Profit % Mark-up on Contractor’s Own Work**

- $0.00 to $5,000: 20%
- $5,001 to $15,000: 17%
- $15,001 to $25,000: 15%
- $25,001 and Greater: 12%

### Section 5

**Trade Name of Subcontractor (from attached proposed change order form(s))**

- Cost $%

### Section 6

<table>
<thead>
<tr>
<th>Bond Fee</th>
<th>(Final Change Order)</th>
<th>$ Amount</th>
<th>% Allowed</th>
<th>Total</th>
</tr>
</thead>
</table>

### Section 11

**Total Proposed Change Order Amount (Lines #6 + #9 OR Line #10)** $
# CCSU- SUBCONTRACTOR CHANGE ORDER PROPOSAL WORKSHEET

**Sub-Contractor:**

**Company Name (Typed or Printed):**

**Date:**

**Project Name:**

**Name:**

**Signature:**

## Section 1

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Unit</th>
<th>Description of Material and Equipment</th>
<th>Unit Cost</th>
<th>Lump Sum Cost</th>
<th>Insert &quot;X&quot; If Credit</th>
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### Line #1

Subtotal Costs - Material and Equipment $\

## Section 2

<table>
<thead>
<tr>
<th>Labor Classification</th>
<th>No. of Workers</th>
<th>Total Hours</th>
<th>Base Rate Per Hour</th>
<th>Taxable Benefits Per Hour (Cash)</th>
<th>Non-Tax. Benefits Per Hour (Plan)</th>
<th>Gross Pay for Prevailing Rate Job (D+E) x C</th>
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</table>

## Section 3

**Labor Hourly Costs:**

<table>
<thead>
<tr>
<th>Taxable</th>
<th>Total:</th>
<th>$</th>
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</thead>
<tbody>
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</tbody>
</table>

## Section 4

**Total Labor, Materials and Taxes (Total Lines #1 + #2 + #3):** $\

## Section 5

<table>
<thead>
<tr>
<th>Overhead and Profit % Mark-up on Contractor's Own Work</th>
<th>% Allowed</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.00 to $5,000</td>
<td>20%</td>
<td>$0.00 $15,001 to $25,000</td>
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<tr>
<td>$5,001 to $15,000</td>
<td>17%</td>
<td>$0.00 $25,001 and Greater</td>
</tr>
<tr>
<td>$15,001 to $25,000</td>
<td>13%</td>
<td>$0.00 $25,001 and Greater</td>
</tr>
</tbody>
</table>

## Section 6

**Total Subcontractor Own Cost (Lines #4 + #5):** $\

## Section 7

**Trade Name:**

**Name of Subcontractor (from attached proposed change order form(s)):**

**Cost:** $\

## Section 8

Subtotal Subcontractor Costs (No Overhead and Profit may be added on this figure) $\

**Total of This Change Order (Lines #6 + #7):** $
SUBCONTRACT AGREEMENT FORM

THIS AGREEMENT made this_________ day of _________, 20______, by and between
__________________, a corporation organized and existing under the laws of _____________ (a
partnership consisting of _____________) (an individual doing business as _____________) hereinafter
called the "Contractor" and ________________, a corporation organized and existing under the
laws of ________________ (a partnership consisting of _____________) (an individual doing
business as _____________) hereinafter called the "Subcontractor",

WITNESSETH that the Contractor and the Subcontractor for the considerations hereafter named, agree as
follows:

1. The Subcontractor agrees to furnish all labor and materials required for the completion of all
work specified in Section No___________ of the specifications for _________(Name of
Subtrade)__________ and the plans referred to therein and addenda No.____________, and
__________ for the (Complete title of project and the project number taken from the title
page of the specifications)___________ all as prepared by  __________________(Name of
Architect or Engineer) ________________ for the sum of ____($_________) and the Contractor
agrees to pay the Subcontractor said sum for said work.  This price includes the following
alternates:

Supplemental No. (s) ___________, ____________, ____________, ___________,
________, _______________, ______________, ___________, ____________, __________.

(a) The Subcontractor agrees to be bound to the Contractor by the terms of the hereinbefore
described plans, specifications (including all general conditions stated therein which
apply to his trade) and addenda No._____ , __________, and __________, and to assume to the Contractor all the obligations and responsibilities that
the Contractor by those documents assumes to the ______(Awarding Authority)_____ ,
hereinafter called the "Awarding Authority", except to the extent that provisions
contained therein are by their terms or by law applicable only to the Contractor.

(b) The Contractor agrees to be bound to the Subcontractor by the terms of the hereinbefore
described documents and to assume to the Subcontractor all the obligations and
responsibilities that the Awarding Authority by the terms of the hereinbefore described
documents assumes to the Contractor, except to the extent that provisions contained
therein are by their terms or by law applicable only to the Awarding Authority.

2. The Contractor agrees to begin, prosecute and complete the entire work specified by the
Awarding Authority in an orderly manner so that  the Subcontractor will be able to begin,
prosecute and complete the work described in this subcontract; and, in consideration thereof,
upon notice from the Contractor, either oral or in writing, the Subcontractor agrees to begin,
prosecute and complete the work described in this Subcontract in an orderly manner in
accordance with completion schedules prescribed by the general contractor for each subcontract
work item, based on consideration to the date or time specified by the Awarding Authority for
the completion of the entire work.
3. The Subcontractor agrees to furnish to the Contractor, within a reasonable time after the execution of this subcontract, evidence of workers' compensation insurance as required by law and evidence of public liability and property damage insurance of the type and in limits required to be furnished to the Awarding Authority by the Contractor.

4. The Contractor agrees that no claim for services rendered or materials furnished by the Contractor to the Subcontractor shall be valid unless written notice thereof is given by the Contractor to the Subcontractor during the first forty (40) days following the calendar month in which the claim originated.

5. This agreement is contingent upon the execution of a general contract between the Contractor and the Awarding Authority for the complete work.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first above-written.

(SEAL)

(WITNESS: ____________________________ By: ______________________________
Its                 , Duly Authorized              Date
Print Name: ___________________________

(SEAL)

(WITNESS: ____________________________ By: ______________________________
Its                 , Duly Authorized              Date
Print Name: ___________________________

++++END OF SECTION++++
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-I Specification sections, apply to work of this section.

1.01 SUMMARY

A. The work of this section includes, but is not limited to, the demolition and removal from the site of existing construction, materials and systems as indicated on Drawings. General items to be demolished include the following:

1. Removal of column covers as indicated.

2. Removal all floor finishes as indicated on drawings down to bare, broom cleaned subfloors. Concrete floors shall be prepared for new floor finishes as indicated in technical specification sections.

3. Removal of existing equipment, supports and/or alterations to existing mechanical, electrical, and plumbing equipment as required to facilitate new construction.

4. Removal of all loose and attached furnishings, fixtures, equipment, systems, debris, junk and everything else, except things indicated to remain.

5. Coring and cutting of existing floor system. All work requiring jack hammering and or saw cutting and removal of the existing concrete slab as shown on the construction documents to be done after hours (the Library closes at 11:00 p.m.).

6. Temporary protection of adjacent building improvements during demolition work.

7. Disconnecting and capping off utilities.


1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Carefully examine all of the Contract Documents for requirements which effect the work of this section. Certain construction, systems, or equipment identified in the Contract Documents or by the Architect in the field shall remain in-place or be removed and stored by others for future service and shall be protected.

B. Other specification sections which directly relate to the work of this section include, but not necessarily limited to, the following:

1. Section 01 01 00 – Summary of Work; Miscellaneous Provisions.

1.04 PROJECT CONDITIONS
A. **Occupancy:** Areas to be demolished will be unoccupied prior to start of work. Section 01 01 00 Summary of Work; occupancy requirements.

B. **Condition of Structures:** Owner assumes no responsibility nor makes any claim as to the actual condition or structural adequacy of any existing construction to be demolished. The Contractor shall investigate and assure himself of the condition of the work to be demolished and shall take all precautions to ensure safety of persons and property.

C. **Salvage:** Items of value which are not indicated to be returned to the Owner or reused on this project shall become the property of the Contractor. Storage or sale of items on the project site is prohibited.

1. Items indicated to be salvaged shall be removed with extreme care to prevent damage. All components and parts of salvaged items shall be saved and packaged. Store salvaged items as directed by Owner or Architect. Items to be salvaged and returned to the Owner or reused on this project include, but are not limited to, the following:

   a. Owner shall advise through Owner’s Representative any additional items to be salvaged.

D. **Traffic:** Conduct operations and removal of debris to ensure minimum interference with the normal use of public passages and other adjacent facilities. Do not close or obstruct traffic ways, corridors, streets, walks or other used facilities without the written permission of the Owner and authorities having jurisdiction.

E. **Protection:** Ensure the safe passage of persons in and around the space and the building during demolition. Prevent injury to persons and damage to property. Protect items to remain. Maintain fire protection systems in operation throughout the work of this project. Provide 8 feet high chain link fence on the exterior of the building to secure work areas and to prevent unauthorized entry into the work site.

F. **Dust and Noise Control:** Take special care to control dust and noise to avoid creating a nuisance. Obtain Architect’s and Owner’s approval of means, methods and techniques use to control dust and noise.

G. **Utilities:** Maintain all utilities except those requiring removal or relocation. Keep utilities in service and protect from damage. Do not interrupt utility serving used areas without first obtaining permission from the Building Owner. Provide temporary services as set forth in “General Requirements”.

1.05 **SUBMITTALS**

A. Submit detailed schedule indicating proposed methods and operations to be used in demolition. Include information for disconnecting utilities and legal disposal of refuse.
PART 3 - EXECUTION

3.01 DEMOLITION

A. Demolish areas as noted on demolition plan and as indicated herein, completely and legally remove debris from site. Use demolition methods within limitations of governing regulations.

B. Proceed with demolition systematically from top to bottom. Demolish in small sections and avoid overloading. Remove all associated adhesives, clips, hangers and other attachment devices with removal of finishes.

1. Interior walls: Remove interior walls and partitions as indicated and as needed to accommodate new work.

2. Ceilings: Where ceilings are indicated to be removed, also remove ceiling mounted systems and equipment leaving only bare structure free from hangers.

3. Floors: Remove floor finishes and construction down to bare, cleaned subfloors free of traces of adhesives and debris that could interfere with new work.

4. Doors, Frames and Windows: Where doors, frames and windows are indicated to be removed from walls or partitions which are to remain, remove doors and frames carefully so as to minimize damage to wall. Repair and patch wall as necessary to accommodate new doorkframe or other new work.

C. Create subfloors and substrates suitable for installation of new work.

D. Upon completion of demolition work, all spaces and surfaces shall be broom clean and all nails, wires, hangers, and other items shall be removed down to bare substrates.

E. Remove all debris from site and dispose of legally. Burning on site is not permitted.

F. Pollutants:

1. Definitions:

   a. Pollutants: means any solid, liquid, gaseous or thermal irritant or contaminant, including gas, alkalis, and chemicals, “waste” and any of the following: heat, smoke, vapor, soot or fumes.

   b. Waste: includes, but is not limited to, materials to be recycled, reconditioned or reclaimed.

2. In the event any “pollutants” are encountered, discharged, dispersed, released, or escaped in the performance of the work, the Contractor shall immediately notify the Owner.

END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDED

A. Install formwork, reinforcing, inserts and concrete as required in accordance with the drawings, specification and applicable Codes.

B. The work shall include floor slab on grade and wood forms.

C. Concrete sealer for interior slab on grade.

1.02 RELATED SECTIONS

A. Section 06 10 00- Carpentry

1.03 QUALITY ASSURANCE

A. Concrete work shall conform to all requirements of A.C.I. 301-99 "Specifications for Structural Concrete", published by the American Concrete Institute, P.O. Box 9094, Farmington Hills, Michigan.

B. Concrete supplier and Contractor shall certify that they are familiar with the above reference standard, and a copy shall be available on the job.

1.04 SUBMITTALS

A. Submit mix design and test results conforming to the compressive strength requirements.

B. Submit Barrier 1 manufacturer literature.

C. Submit concrete floor hardener manufacturer literature.

PART 2 - PRODUCTS

2.01 STANDARD ITEMS

A. Furnish all items in accordance with A.C.I. STANDARD 301-99, except as noted below.
2.02 **CONCRETE**
Do not use admixtures containing calcium chloride. All concrete shall contain a water-reducing and densifying admixture such as MASTER BUILDERS POZZOLITH or an approved equal as follows:

A. All admixtures shall be incorporated as an integral part of the mix design.

B. Admixture shall be manufactured by a firm having not less than 10 years experience in manufacturing and field testing of the product.

C. Compressive strength of concrete shall be 3500 P.S.I. for foundation work and 4000 P.S.I. for slab on grade. Slump 5" +/- 1".

D. Slab on grade water to cement ratio to be no greater than 42. If in areas of tight rebar cover or congestion the use of smaller aggregate is allowed. All mixes to be submitted for approval before being used in the field.

E. Proportion all concrete to resist destructive exposure.

F. Exterior exposed concrete to have 5% +/- 1% air entrainment.

G. Interior slab on grade to have Barrier 1 admixture.

2.03 **REINFORCING**

A. All reinforcing bars shall conform to ASTM 615 GRADE 60.

2.04 **SLABS**

A. Provide 15 mil vapor barrier below interior slabs on grade. Vapor barrier shall meet the requirements of ASTM-1745-97 Class A standards.

2.05 **CONCRETE SEALER**

A. Sherwin Williams H&C Wet Look Water Based Sealer.

B. H&C shark Grip Slip Resistant Additive

**PART 3 - EXECUTION**

3.01 **CONCRETE**

A. Discharge concrete from mixer within 90 minutes of batching.

B. Cold and Hot Weather Concrete:
   Unless otherwise permitted, the temperature of concrete as delivered shall not exceed 90 degrees F. Loss of slump, flash set, or cold joints due
to temperature of concrete as placed will not be acceptable. When
temperature of concrete exceeds 90 degree F, obtain acceptance from
the Architect of proposed precautionary measures to be undertaken.
When temperature of steel reinforcement, embedments, or forms is
greater than 120 degree F, fog steel reinforcement, embedments, and
form with water immediately before placing concrete. Remove standing
water before placing concrete.

3.02 **SLABS ON GROUND**

A. Install vapor barrier widest practical width, lapping joints at least 6". Seal
joints with manufacturer's recommended pressure sensitive tape. Deliver
inserts and rough-in frames to site at appropriate time. Tape around all
penetrations. Turn up vapor barrier at walls to 1" below top of slab, and
nail through insulation hold in place.

B. Apply floor hardener after curing has been completed in accordance
with manufacturer's recommendations.

C. Sawcut control joints shall be cut at the locations shown on the
foundation plan. The sawcut joints shall be cut with power saws
equipped with shatterproof abrasive or diamond-rimmed blades. Cut
1/8" wide joints into concrete when cutting action will not tear, abrade or
otherwise damage surface and before concrete develops random
contraction cracks. Depth of sawcut shall be 1/3 slab thickness.

3.03 **FINISHES AND TOLERANCES**

A. All slabs shall receive a trowel finish. Produce a floor finish which will meet
the following tolerances:

- Overall values of flatness for slabs-on-grade: F(F) 35, and levelness, F(L) 25;
  with minimum local values of flatness, F(F) 24 and levelness, F(L) 17.

3.04 **CONCRETE SEALER**

A. Apply concrete sealer to interior concrete slabs scheduled to receive
sealer.
   When preparing concrete for sealer and applying sealer use adequate
   ventilation. Use NOISH approved respirator when necessary.

B. Do not apply sealer until after concrete slab has been installed for at least
   30 days.

C. Slab condition:
1. All concrete shall be clean and free of laitance, oil, grease and mildew. If mold, mildew or fungus is present, kill and remove with a solution of one-cup household bleach to one gallon of water. DO NOT ADD DETERGENTS OR AMMONIA TO THE BLEACH/WATER SOLUTION.

2. Etch concrete with muriatic acid. Follow label directions. The surface should have the feel of 120-grit sand paper.

3. Allow 24 hours before applying sealer.

D. Apply sealer with a brush and roller or airless spray equipment. Follow manufacturer's direction for application.

E. Add Shark Grip Slip Resistant Additive to the final coat. Follow label directions.

END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDED

A. Miscellaneous angles, plates, channels, and tubes for supports of various construction.

B. Metal Tube: - Menu Stand and Ceiling Lighting Canopy.

C. Miscellaneous hangers, brackets and supports.

1.02 RELATED WORK

A. Section 01 00 00: Supplemental General Conditions.

B. Section 03 30 00: Cast-In-Place Concrete.

C. Section 09 90 00: Painting and Coating

1.03 SUBMITTALS

A. Submit shop drawings under provisions of General Conditions and Supplemental General Conditions.

B. Prepare shop drawings of railing after taking field measurement of the built condition. Indicate on the shop drawings any deviations from the design drawings. Any deviations will require Architect’s review.

C. Prepare plans in ½” scale.

D. Prepare elevations in 1-1/2” scale minimum.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Steel Sections and Plate: Commercial Quality Low Carbon Steel.

B. Primer:

1. Ferrous metals: DeVoe, Mirrolac modified epoxy #13101 or equal.
2. Galvanized steel: DeVoe, Mirmolac galvanized metal primer #13201 or equal.

C. Electrolytic Zinc coated steel minimum coating, class C, ASTM A591-83 for Steel Sheet materials.

D. Aluminum Plate, Tube and Sheet: Alloy and temper recommended by aluminum producer or finisher for type of use and finish indicated, and with not less than the strength and durability properties specified in ASTM B 209, alloy 6061-T6

2.02 FABRICATION

A. Welding shall conform to the requirements of the AWS. Grind exposed welds smooth.

B. After Work is fabricated, peen or upset bolt threads to prevent loosening.

C. Grind rough edges smooth.

D. Hot dip galvanize all products for exterior location including items built into exterior construction, including structural steel lintels, and ladder, after fabrication. Conform to the requirements of ASTM A386, 2.0 oz. per square foot.

E. Prepare ferrous items for priming as follows:
   1. Remove obvious deposits of grease and oil first.
   2. Remove loose mill scale, loose black oxide, all rust, all welding flux and spatter and other contaminants by grinding and wire brushing. Do not roughen or burnish metal.
   3. Clean entire surface by flooding with clean mineral spirits and wiping dry with clean cloths.

F. Prepare galvanized metals for priming as follows:
   1. Remove obvious deposits of grease and oil first.
   2. Flood with white vinegar, wet entire surface; let stand for five minutes, repeat three times.
   3. Remove vinegar residue with clean rags and clear water.
   4. Dry surfaces with clean rags.
   5. Clean entire surface by flooding with clean mineral spirits and wiping dry with clean cloths. Repeat once.
G. Apply primer in thickness recommended by manufacturer. Do not over thin. Avoid runs, sags, and holidays. Brush primer into cracks and joints.

1. Note that specified primer is slow drying. Allow primer to dry 72 hours before handling or shipping.

PART 3 - EXECUTION

3.01 SCHEDULE

A. Angle Framing and channels:

1. Miscellaneous brackets, supports, anchors, and frames for mechanical and electrical equipment are specified in Division 22 through 28.

2. Provide miscellaneous brackets, supports, anchors, and lintels other than for mechanical and electrical equipment.

B. Provide miscellaneous angles, plates, channels and tubes for support of construction such as overhead doors, hollow metal frames and other construction shown on drawings. Welds shall be continuous. Ground weld joints smooth. Exterior application shall be hot dip galvanized after fabrication.

C. Provide miscellaneous anchors and supports as required to complete the project.

3.02 INSTALLATION

A. Install items firmly attached to supporting construction as detailed on drawings.

B. If primer becomes damaged, prepare and prime damaged spots as specified above under FABRICATION.

C. Secure and design railings to provide a minimum resistance of 50lbs. per lf uniform loading in any direction and 200lbs. concentrated in any direction per 1607.7 IBC 2003 with Connecticut supplements and as required in ASCE 7-95, Minimum Design Loads for Buildings and Other Structures, Section 4.4 “Loads on handrails, Guardrails Systems, Grab Bar Systems, and Vehicle Barrier Systems.

3.06 PROTECTION

A. Protect all completed work from damage.

END OF SECTION
PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the carpentry work as shown on the drawings and/or specified herein, including but not limited to, the following:

1. Blocking and miscellaneous wood.
2. Plywood backing panels for electrical panels.
3. Rough hardware.
4. Installation of Cabinet Locks in Starbucks supplied casework.
5. Installation of doors and hollow metal frames and finish hardware.

1.3 RELATED SECTIONS

A. Steel Doors and Frames - Section 08 11 13.
B. Finish Hardware - Section 08 71 00.

1.4 QUALITY ASSURANCE

A. Lumber Standard: Comply with PS 20.
B. Plywood Standard: Comply with PS 1 and American Plywood Assoc. (APA).
C. Shop fabricate carpentry work to the extent feasible and where shop fabrication will result in better workmanship than feasible for on-site fabrication.
D. Grade Marks: Identify lumber and plywood by official grade mark.

1. Lumber: Grade stamp to contain symbol of grading agency certified by Board of Review, American Lumber Standards Committee, mill number or name, grade of lumber, species grouping or combination designation, rules under which graded where applicable, and condition of seasoning at time of manufacture.

a. S-Dry: Maximum nineteen (19) percent moisture content as per ASTM D 2016.
E. Installation of doors, frames and hardware shall conform to the minimum standards of "Installation Guides for Doors and Hardware" of the Door and Hardware Institute.

1.5 SUBMITTALS

A. Fire-Retardant Treatment: Include certification by treating plant that treatment material complies with governing ordinances and that treatment will not bleed through finished surfaces.

1.6 PRODUCT HANDLING

A. Deliver carpentry materials to the site ready to use with each piece of lumber clearly marked as to grade, type and mill, and place in an area protected from the elements.

B. Deliver rough hardware in sealed kegs and/or other containers which shall bear labels as to type and kind.

C. Store grounds and similar small sized lumber inside the building as soon as possible after delivery. Do not store seasoned lumber in wet or damp portions of the building.

D. Protect fire retardant treated materials against high humidity and moisture during storage and erection.

E. Remove delivered materials which do not conform to specified grading rules or are otherwise not suitable for installation from the job site and replace with acceptable materials.

F. All items specified in Section 087100 of this specification entitled "Finish Hardware" shall be received, accounted for, stored and applied under this Section.

G. Hardware shall be sorted and stored in space assigned by Contractor and shall be kept at all times under lock and key. The safety and preservation of all items delivered will be the responsibility of the Contractor.

1.7 JOB CONDITIONS

A. Installer must examine the substrates and supporting structure and the conditions under which the carpentry work is to be installed, and notify the Contractor in writing of conditions detrimental to the work. Do not proceed with the installation until unsatisfactory conditions have been corrected in a manner acceptable to the Installer and the Architect.

B. 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 proper attachment of other work.
PART 2 PRODUCTS

2.1 WOOD MATERIAL

A. General

1. All wood shall be sound, flat, straight, well seasoned, thoroughly dry and free from all defects. Warped or twisted wood shall not be used.

2. For miscellaneous wood blocking, grounds, furring as required, use Utility Grade Coastal Douglas Fir or Southern Pine, free from knots, shakes, rot or other defects, straight, square edges and straight grain, air seasoned with maximum moisture content of nineteen (19) percent. Wood shall be S4S, S-Dry, complying with PS-20.

3. Plywood and rough carpentry for telephone and electrical closets, provide 3/4" thick C-D EXT-APA plywood, fire retardant treated as specified herein.

B. Wood Treatment

1. All interior wood material specified herein shall be fire retardant treated to comply with the AWPA standards (C20 for lumber, C27 for plywood) for pressure impregnation with fire retardant chemical to achieve a flame spread rating of not more than 25 (UL Class “FR-S”) when tested in accordance with UL Test 723 or ASTM E 84. The fire retardant chemicals used to treat the lumber must comply with FR-1 of AWPA Standard P17 and be free of halogens, sulfates and ammonium phosphate.

   a. After treatment, kiln dry to a moisture content of fifteen (15) percent; if wood is to be painted or finished, kiln dry to a moisture content of twelve (12) percent. Treatment shall be equal to "Dricon" made by Arch Wood Protection Inc. or approved equal. Provide UL approved identification on treated materials.

2. Treated wood which is cut or otherwise damaged shall be further treated in accordance with the AWPA Standard M-4.

2.2 HARDWARE

A. Rough Hardware for Treated Woods: Hot-dipped galvanized or Type 304 stainless steel.

B. Nails: Common steel wire, untreated for interior work as per ASTM F 1667.

C. Bolts: Standard mild steel, square head machine bolts with square nuts and malleable iron or steel plate washers or carriage bolts with square nuts and cut washers conforming to the following:

   1. Bolts: ASTM A 307, Grade A.


D. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.


2. Material for Treated Woods: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

E. Wood Screws: ASME B 18.6.1.

F. Concrete and Masonry Anchors: Standard expansion-shield self-drilling type concrete anchors where so shown or noted on the drawings, or where approved by the Architect.

1. Locks: All cabinets to have locks keyed per room.

G. Cabinet Locks: All cabinets to have locks provided and installed by General Contractor and shall be keyed alike.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where carpentry is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION OF FINISH HARDWARE

A. Hardware shall be carefully fitted and securely attached, in accordance with these specifications and the instructions of the various manufacturers.

B. Unless otherwise noted, mount hardware units at heights established in Section 08 11 13.

C. Install each hardware item in compliance with the manufacturer’s instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, install each item completely and then remove and store in a secure place during the finish application. After completion of the finishes, re-
install each item. Do not install surface-mounted items until finishes have been completed on the substrate.

D. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units which are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

F. Cut and fit threshold and floor covers to profile of door frames, with mitered comers and hair-line joints. Join units with concealed welds or concealed mechanical joints. Cut smooth openings for spindles, bolts and similar items, if any.

G. All keys used shall be construction keys which are to be tagged with fiber discs as approved, clearly labeled with identifying inscriptions and then neatly arranged in a temporary cabinet. All construction keys shall be returned to the Owner.

H. Adjusting and Cleaning

1. Adjust and check each operating item of hardware and each door, to ensure proper operation and function of every unit. Lubricate moving parts with type lubrication recommended by manufacturer (graphite type if no other recommended). Replace units which cannot be adjusted and lubricated to operate freely and smoothly as intended for the application made.

2. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make a final check and adjustment of all hardware items in such space or area. Clean and re-lubricate operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

3.3 INSTALLATION OF DOORS AND FRAMES

A. Preparation

1. Remove welded-in shipping spreaders installed at factory.

2. Prior to installation and with installation spreaders in place, adjust and securely brace standard steel door frames for squareness, alignment, twist, and plumb to the following tolerances:

   a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
d. Plumbness: Plus or minus 1/16 inch, measured at jambs on a perpendicular line from head to floor.

3. Drill and tap doors and frames to receive non-templated mortised and surface-mounted door hardware.

B. Installation

1. General: Provide doors and frames of sizes, thicknesses, and designs indicated. Install steel doors and frames plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

2. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.

   a. Install frames in accordance with ANSI 250.11-20001, Recommended Erection Instructions for Steel Frames, unless more stringent requirements are specified herein.
   b. At fire-protection-rated openings, install frames according to NFPA 80.
   c. Where frames are fabricated in sections due to shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
   d. Install frames with removable glazing stops located on secure side of opening.
   e. Frames set in masonry walls shall have door silencers installed in frames before grouting.
   f. Remove temporary braces necessary for installation only after frames have been properly set and secured.
   g. Check plumb, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.

3. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor and secure with post-installed expansion anchors.

   a. Floor anchors may be set with powder-actuated fasteners instead of post-installed expansion anchors if so indicated and approved on Shop Drawings.

4. Metal-Stud Partitions: Solidly pack mineral-fiber insulation behind frames conforming to the requirements of Section 072100, "Thermal Insulation."
5. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar; refer to Section 042000, "Unit Masonry," for installation of frames in masonry walls.

6. In-Place Concrete or Masonry Construction: Secure frames in place with post-installed expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.

7. In-Place Gypsum Board Partitions: Secure frames in place with post-installed expansion anchors through floor anchors at each jamb. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.

8. Ceiling Struts: Extend struts vertically from top of frame at each jamb to supporting construction above, unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction above. Provide adjustable wedged or bolted anchorage to frame jamb members.


   a. Fire-Rated Doors: Install doors with clearances according to NFPA 80.

11. Glazing: Comply with installation requirements in Division 8 Section "Glass and Glazing" and with standard steel door and frame manufacturer's written instructions.
   a. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c., and not more than 2 inches o.c. from each corner.

C. Adjustments: Check and readjust operating finish hardware items just prior to final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including doors or frames which are warped, bowed or otherwise unacceptable.

3.4 BLOCKING AND MISCELLANEOUS WOOD

A. General

1. Erect rough carpentry true to line, levels and dimensions required; squared, aligned, plumbed, and securely fastened in place.
2. Shim where required to true up furring, blocking and the like. Use wood or metal shims only.

3. Do all cutting, fitting, drilling and tapping of other work as required to secure work in place and to perform the work included herein. Do all the cutting and fitting of carpentry work, for the work of other trades as required.

B. Blocking and Miscellaneous Wood

1. Furnish and install all wood grounds, furring, blocking, curbs, bucks, nailers, etc., that may be necessary and required in connection with the carpentry and with the work described for any other trades and including required carpentry for electrical fixtures. All blocking and nailers shall be continuous wherever required, whether or not so indicated.

2. Blocking shall be as required for the proper installation of the finished work and for items in mechanical sections as required. Blocking, edgings, stops, nailing strips, etc., shall be continuous, unless distinctly noted otherwise. Provide blocking as required to install all equipment. Provide blocking and nailers where shown or required to fasten interior sheet metal work.

3. Fastening for wood grounds, furring and blocking shall be of metal and of type and spacing as best suited to conditions. Hardened steel nails, expansion screws, toggle bolts, self-clinching nails, metal plugs, inserts or similar fastenings shall be used, of suitable type and size to draw the members into place and securely hold same.

3.5 TELEPHONE AND ELECTRICAL EQUIPMENT MOUNTING BOARDS

A. Furnish and install 3/4" thick plywood panels to the walls of the telephone and electrical equipment rooms in accordance with the requirements of the local utility company.

B. Secure to wall using proper devices for substrates encountered, spaced twelve (12) inches o.c., maximum around the edges, 1-1/2" from comers, and in three (3) rows of three (3) each in the field. Recess fastening devices flush with the plywood surface. Adjacent panels shall be butted with 1/16" space between without lapping.

3.6 ROUGH HARDWARE

A. Securely fasten rough carpentry together. Nail, spike, lag screw or bolt as required by conditions encountered in the field and the Contract Documents.

B. Provide rough or framing hardware, such as nails, screws, bolts, anchors, hangers, clips, inserts, miscellaneous fastenings, and similar items of the best quality and of the proper size and kind to adequately secure the work together and in place, in a rigid and substantial manner.
C. Secure rough carpentry to masonry with countersunk bolts in expansion sleeves or other acceptable manner, with fastenings not more than sixteen (16) inches apart. Secure woodwork to hollow masonry with toggle bolts spaced not more than sixteen (16) inches apart.

D. Countersink bolts in nailers and other rough woodwork and include washers and nuts. Cut bolts off flush with surfaces and peen as may be required to receive finished work.

E. Inserts to secure wood nailers to concrete shall be malleable iron threaded inserts with 3/8" diameter bolts of length to allow for countersinking. Locate at end of each nailer and at intervals not exceeding thirty (30) inches o.c.

F. Furnish to the mason for building into the work, or attaching the work which is to be built in, anchors, bolts, wall plates bolted to masonry, corrugated wall plugs, nailing blocks, etc., which are required for the proper fastening and installation for the work or other items as called for in this Section.

G. Detailed instructions with sketches of necessary requirements, shall be given to the masonry trade showing the location and other details of such nailing devices.

3.7 CLEANING UP

A. General: Keep the premises in a neat, safe and orderly condition at all times during execution of this portion of the work, free from accumulation of sawdust, cut-ends and debris.

B. Sweeping: At the end of each working day, or more often if necessary, thoroughly sweep all surfaces where refuse from this portion of the work has settled.

1. Upon completion of this portion of the work, thoroughly broom clean all surfaces.

END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDED

A. Counter tops.

1.02 RELATED WORK

A. Section 06 10 00 Carpentry

1.03 DEFINITION

A. Solid surface is defined as nonporous, homogeneous material maintaining the same composition throughout the part with a composition of acrylic polymer, aluminum trihydrate filler and pigment.

1.04 SUBMITTALS

A. Product data:
   1. For each type of product indicated.

B. Shop drawings:
   1. Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices and other components.
      a. Show full-size details, edge details, thermoforming requirements, attachments, etc.
      b. Show locations and sizes of furring, blocking, including concealed blocking and reinforcement specified in other Sections.
      c. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, waste receptacle and other items installed in solid surface.

C. Samples:
   1. For each type of product indicated.
      a. Submit minimum 6-inch by 6-inch sample in specified gloss.
      b. Cut sample and seam together for representation of inconspicuous seam.
      c. Indicate full range of color and pattern variation.
   2. Approved samples will be retained as a standard for work.
D. Product data:
   1. Indicate product description, fabrication information and compliance
      with specified performance requirements.

E. LEED submittals:
   1. Credit EQ 4.1:
      a. Manufacturer’s product data for installation adhesives,
         including printed statement of VOC content and material
         safety data sheets.

   2. Credits MR 5.1:
      a. Product data indicating that materials are regionally
         manufactured and within 500 miles of the project site.

F. Product certificates:
   1. For each type of product, signed by product manufacturer.

G. Fabricator/installer qualifications:
   1. Provide copy of certification number.

H. Manufacturer certificates:
   1. Signed by manufacturers certifying that they comply with requirements.

I. Maintenance data:
   1. Submit manufacturer’s care and maintenance data, including repair
      and cleaning instructions.
      a. Maintenance kit for finishes shall be submitted.
   2. Include in project closeout documents.

1.05 QUALITY ASSURANCE

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

B. Fabricator/installer qualifications:
   1. Work of this section shall be by a certified fabricator/installer, certified in
      writing by the manufacturer.

C. Applicable standards:
   1. Standards of the following, as referenced herein:
      a. American National Standards Institute (ANSI)
      b. American Society for Testing and Materials (ASTM)
      c. National Electrical Manufacturers Association (NEMA)
      d. NSF International
   2. Fire test response characteristics:
      a. Provide with the following Class A (Class I) surface burning
         characteristics as determined by testing identical products per
UL 723 (ASTM E84) or another testing and inspecting agency acceptable to authorities having jurisdiction:
1) Flame Spread Index: 25 or less.
2) Smoke Developed Index: 450 or less.

D. Coordination drawings:
1. Shall be prepared indicating:
   a. Plumbing work.
   b. Electrical work.
   c. Miscellaneous steel for the general work.
   d. Indicate location of all walls (rated and non-rated), blocking locations and recessed wall items, etc.

2. Content:
   a. Project-specific information, drawn accurately to scale.
   b. Do not base coordination drawings on reproductions of the contract documents or standard printed data.
   c. Indicate dimensions shown on the contract drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements.
   d. Provide alternate sketches to designer for resolution of such conflicts.

   1) Minor dimension changes and difficult installations will not be considered changes to the contract.

E. Drawings shall:
   1. Be produced in 1/2-inch scale for all fabricated items.

F. Drawings must be complete and submitted to the architect within 60 days after award of contract for record only.
   1. No review or approval will be forthcoming.
   2. Coordination drawings are required for the benefit of contractor’s fabricators/installers as an aid to coordination of their work so as to eliminate or reduce conflicts that may arise during the installation of their work.

H. Pre-installation conference:
   1. Conduct conference at project site to comply with requirements in Division 1.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver no components to project site until areas are ready for installation.
B. Store components indoors prior to installation.
C. Handle materials to prevent damage to finished surfaces.
   1. Provide protective coverings to prevent physical damage or staining following installation for duration of project.
1.07 WARRANTY

A. Provide manufacturer’s warranty against defects in materials.
   1. Warranty shall provide material and labor to repair or replace defective materials.
   2. Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.

1.08 MAINTENANCE

A. Provide maintenance requirements as specified by the manufacturer.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers:
   1. Subject to compliance with requirements, provide products by one of the following:
      a. Corian® surfaces from the DuPont company (basis of design).
      b. Gibraltar by Wilsonart.
      c. Staron by Samsung.

2.02 MATERIALS

A. Solid polymer components
   1. Cast, nonporous, filled polymer, not coated, laminated or of composite construction with through body colors meeting ANSI Z124.3 or ANSI Z124.6, having minimum physical and performance properties specified.
   2. Superficial damage to a depth of 0.010 inch (.25 mm) shall be repairable by sanding and/or polishing.

B. Thickness: 1 inch

C. Edge treatment: Bullnose

D. Backsplash: None

E. Sidesplash: None
I. Performance characteristics:

<table>
<thead>
<tr>
<th>Property</th>
<th>Typical Result</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength</td>
<td>6,000 psi</td>
<td>ASTM D 638</td>
</tr>
<tr>
<td>Tensile Modulus</td>
<td>1.5 x 10⁻⁶ psi</td>
<td>ASTM D 638</td>
</tr>
<tr>
<td>Tensile Elongation</td>
<td>0.4% min.</td>
<td>ASTM D 638</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>10,000 psi</td>
<td>ASTM D 790</td>
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<tr>
<td>Flexural Modulus</td>
<td>1.2 x 10⁻⁶ psi</td>
<td>ASTM D 790</td>
</tr>
<tr>
<td>Hardness</td>
<td>&gt;85</td>
<td>Rockwell “M” Scale</td>
</tr>
<tr>
<td>Thermal Expansion</td>
<td>3.02 x 10⁻⁵ in./in./°C</td>
<td>ASTM D 696</td>
</tr>
<tr>
<td></td>
<td>(1.80 x 10⁻⁵ in./in./°F)</td>
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<tr>
<td>Gloss (60° Gardner)</td>
<td>5–75 (matte—highly polished)</td>
<td>ANSI Z124</td>
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<tr>
<td>Light Resistance</td>
<td>(Xenon Arc) No effect</td>
<td>NEMA LD 3-2000</td>
</tr>
<tr>
<td>Wear and Cleanability</td>
<td>Passes</td>
<td>ANSI Z124.3 &amp; Z124.6</td>
</tr>
<tr>
<td>Stain Resistance: Sheets</td>
<td>Passes</td>
<td>ANSI Z124.3 &amp; Z124.6</td>
</tr>
<tr>
<td>Fungus and Bacteria Resistance</td>
<td>Does not support microbial growth</td>
<td>ASTM G21 &amp; G22</td>
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<tr>
<td>Boiling Water Resistance</td>
<td>No visible change</td>
<td>NEMA LD 3-2000</td>
</tr>
<tr>
<td>High Temperature Resistance</td>
<td>No change</td>
<td>NEMA LD 3-2000</td>
</tr>
<tr>
<td>Izod Impact (Notched Specimen)</td>
<td>0.28 ft.-lbs./in. of notch</td>
<td>ASTM D 256 (Method A)</td>
</tr>
<tr>
<td>Ball Impact Resistance: Sheets</td>
<td>No fracture—1/2 lb. ball:</td>
<td>NEMA LD 3-2000 (Method 3.8)</td>
</tr>
<tr>
<td></td>
<td>1/4&quot; slab—36&quot; drop</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/2&quot; slab—144&quot; drop</td>
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<tr>
<td>Weatherability</td>
<td>ΔE*&lt;5 in 1,000 hrs.</td>
<td>ASTM G 155</td>
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<tr>
<td>Specific Gravity †</td>
<td>1.7</td>
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</tr>
<tr>
<td>Water Absorption</td>
<td>Long-term</td>
<td>ASTM D 570</td>
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<tr>
<td></td>
<td>0.4% (3/4&quot;)</td>
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</tr>
<tr>
<td></td>
<td>0.6% (1/2&quot;)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.8% (1/4&quot;)</td>
<td></td>
</tr>
<tr>
<td>Toxicity</td>
<td>99 (solid colors)</td>
<td>Pittsburgh Protocol Test (“LC50” Test)</td>
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<tr>
<td>Flammability</td>
<td>66 (patterned colors)</td>
<td>NFPA 255 &amp; UL 723</td>
</tr>
<tr>
<td>Flame Spread Index</td>
<td>&lt;25</td>
<td></td>
</tr>
<tr>
<td>Smoke Developed Index</td>
<td>&lt;25</td>
<td></td>
</tr>
</tbody>
</table>
† Approximate weight per square foot: 1/4" (6 mm) 2.2 lbs., 1/2" (12.3 mm) 4.4 lbs.
Shapes meet or exceed the ANSI Z124.3 and ANSI Z124.6 standards for plastic sinks and lavatories.
NEMA results based on the NEMA LD 3-2000

2.03 ACCESSORIES

A. Joint adhesive:
   1. Manufacturer’s standard one- or two-part adhesive kit to create inconspicuous, nonporous joints.
B. Sealant:
   1. Manufacturer’s standard mildew-resistant, FDA-compliant, NSF 51-compliant (food zone — any type), UL-listed silicone sealant in colors matching components.

D. Conductive tape:
   1. Manufacturer’s standard aluminum foil tape, with required thickness, for use with cutouts near heat sources.
E. Insulating felt tape:
   1. Manufacturer’s standard for use with conductive tape in insulating solid surface material from adjacent heat source.

2.04 FACTORY FABRICATION

A. Shop assembly
   1. Fabricate components to greatest extent practical to sizes and shapes indicated, in accordance with approved shop drawings and manufacturer’s printed instructions and technical bulletins.
   2. Form joints between components using manufacturer’s standard joint adhesive without conspicuous joints.
      a. Reinforce with strip of solid polymer material, 2” wide.
   3. Provide factory cutouts for plumbing fittings and bath accessories as indicated on the drawings.
   4. Rout and finish component edges with clean, sharp returns.
      a. Rout cutouts, radii and contours to template.
      b. Smooth edges.
      c. Repair or reject defective and inaccurate work.

2.05 FINISHES

A. Select from the manufacturer’s standard color chart.

B. Finish:
   1. Provide surfaces with a uniform finish.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions, with fabricator present for compliance with requirements for installation tolerances and other conditions affecting performance of work.

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

3.02 INSTALLATION

A. Install components plumb, level and rigid, scribed to adjacent finishes, in accordance with approved shop drawings and product data.
   1. Provide product in the largest pieces available.
   2. Form field joints using manufacturer’s recommended adhesive, with joints inconspicuous in finished work.
      a. Exposed joints/seams shall not be allowed.
   3. Reinforce field joints with solid surface strips extending a minimum of 1 inch on either side of the seam with the strip being the same thickness as the top.
   4. Cut and finish component edges with clean, sharp returns.
   5. Rout radii and contours to template.
   6. Anchor securely to base cabinets or other supports.
   7. Align adjacent countertops and form seams to comply with manufacturer’s written recommendations using adhesive in color to match countertop.
   8. Carefully dress joints smooth, remove surface scratches and clean entire surface.
   9. Install countertops with no more than 1/8-inch (3 mm) sag, bow or other variation from a straight line.

B. Applied backsplashes and sidesplashes:
   1. Install applied sidesplashes using manufacturer’s standard color-matched silicone sealant.
   2. Adhere applied sidesplashes to countertops using manufacturer’s standard color-matched silicone sealant.

C. Integral sinks/vanities:
1. Provide solid surface materials bowls and/or lavatories sinks with overflows in locations shown on the drawings.
2. Secure sinks and lavatory bowls to tops using manufacturer’s recommended sealant, adhesive and mounting hardware to maintain warranty.

3.03 REPAIR

A. Repair or replace damaged work which cannot be repaired to architect’s satisfaction.

3.04 CLEANING AND PROTECTION

A. Keep components clean during installation.
B. Remove adhesives, sealants and other stains.

END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 DEFINITIONS

A. Firestopping: Material or combination of materials used to retain integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke, and hot gases through penetrations in fire rated wall and floor assemblies.

1.02 GENERAL DESCRIPTION OF THE WORK OF THIS SECTION

Only tested firestop systems shall be used in specific locations as follows:

A. Penetrations for the passage of duct, cable, cable tray, conduit, piping, electrical busways and raceways through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions for all construction activities.

B. Safing slot gaps between edge of floor slabs and curtain walls.

C. Openings between structurally separate sections of wall or floors.

D. Gaps between the top of walls and ceilings or roof assemblies.

E. Expansion joints in walls and floors.

F. Openings and penetrations in fire-rated partitions or walls containing fire doors.

G. Openings around structural members which penetrate floors or walls.

H. Incapsulateing structural members as part of a rated system.

I. Incapsulateing structural members as part of a rated system.

1.03 RELATED WORK OF OTHER SECTIONS

A. Coordinate work of this section with work of other sections as required to properly execute the work and as necessary to maintain satisfactory progress of the work of other sections, including:

1. Section 03 30 00-Cast-in-place Concrete
2. Section 07 90 00-Joint Protection
3. Section 09 21 16-Gypsum Board Assemblies
4. Division 21 - Fire suppression
5. Division 22 - Plumbing
6. Division 23 – HVAC
7. Division 26 – Electrical
8. Division 27 – Communications
9. Division 28 – Electronic Safety and Security

1.04 REFERENCES


C. Underwriters Laboratories (UL) of Northbrook, IL runs ASTM E-814 under their designation of UL 1479 and publishes the results in their “FIRE RESISTANCE DIRECTORY” that is updated annually with a midyear supplement.
   a. UL Fire Resistance Directory:
      i. Through-Penetration Firestop Devices (XHCR)
      ii. Fire Resistance Ratings (BXUV)
      iii. Through-Penetration Firestop Systems (XHEZ)
      iv. Fill, Voids, or Cavity Material (XHHW)
      v. Forming Materials (XHKU)


1.05 QUALITY ASSURANCE

A. A manufacturer’s direct representative (not distributor or agent) to be on-site during initial installation of firestop systems to train appropriate contractor personnel in proper selection and installation procedures. This will be done per manufacturer’s written recommendations published in their literature and drawing details.

B. Firestop System installation must meet requirements of ASTM E-814, UL 1479 or UL 2079 tested assemblies that provide a fire rating equal to that of construction being penetrated.
C. Proposed firestop materials and methods shall conform to applicable
governing codes having local jurisdiction.

D. Firestop Systems do not reestablish the structural integrity of load bearing
partitions/assemblies, or support live loads and traffic. Installer shall consult the
structural engineer prior to penetrating any load bearing assembly.

E. For those firestop applications that exist for which no UL tested system is
available through any manufacturer, a manufacturer's engineering judgment
derived from similar UL system designs or other tests will be submitted to local
authorities having jurisdiction (Office of the State Building Official) for their
review and approval prior to installation. Engineer judgment drawings must
follow requirements set forth by the International Firestop Council (September 7,
1994).

1.06 SUBMITTALS

A. Submit Product Data: Manufacturer's specifications and technical data for
each material including the composition and limitations, documentation of UL
firestop systems to be used and manufacturer's installation instructions to
comply with Section 01 33 00.

B. Manufacturer's engineering judgment identification number and drawing
details when no UL system is available for an application. Engineer judgment
must include both project name and contractor's name who will install firestop
system as described in drawing.

C. Submit material safety data sheets provided with product delivered to job-site.

1.07 INSTALLER QUALIFICATIONS

A. Engage an experienced Installer who is certified, licensed, or otherwise
qualified by the firestopping manufacturer as having been provided the
necessary training to install manufacturer's products per specified
requirements. A manufacturer's willingness to sell its firestopping products to
the Contractor or to an Installer engaged by the Contractor does not in itself
confer qualification on the buyer.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials undamaged in manufacturer's clearly labeled, unopened
containers, identified with brand, type, and UL label where applicable.

B. Coordinate delivery of materials with scheduled installation to allow minimum
storage time at job-site.

C. Store materials under cover and protect from weather and damage in
compliance with manufacturer's requirements.
D. Comply with recommended procedures, precautions or remedies described in material safety data sheets as applicable.

E. Do not use damaged or expired materials.

1.09 PROJECT CONDITIONS

A. Do not use materials that contain flammable solvents.

B. Schedule installation of firestopping after completion of penetrating item installation but prior to covering or concealing of openings.

C. Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding.

D. Weather conditions: Do not proceed with installation of firestop materials when temperatures exceed the manufacturer’s recommended limitations for installation printed on product label and product data sheet.

E. During installation, provide masking and drop cloths to prevent firestopping materials from contaminating any adjacent surfaces.

PART 2 - PRODUCTS

2.01 FIRESTOPPING, GENERAL

A. Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacturer based on testing and field experience.

B. Provide components for each firestopping system that are needed to install fill material. Use only components specified by the firestopping manufacturer and approved by the qualified testing agency for the designated fire-resistance-rated system.

C. Firestopping Materials are either “cast-in-place” (integral with concrete placement) or “post-installed.” Provide cast-in-place firestop devices prior to concrete placement.

D. Firestopping for all trades shall be undertaken by one firm and fall under one warranty.

2.02 ACCEPTABLE MANUFACTURERS

A. Subject to compliance with through penetration firestop systems (XHEZ) listed in Volume II of the UL Fire Resistance Directory, provide products of the following manufacturers as identified below:

1. Hilti, Inc., Tulsa, Oklahoma, (918) 252-6901
Provide products from one of the three acceptable manufacturers; no substitutions will be accepted.

2.03 MATERIALS

A. Use only firestop products that have been UL 1479, ASTM E-814, or UL 2079 tested for specific fire-rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire-rating involved for each separate instance.

B. Cast-in-place firestop devices for use with non-combustible and combustible plastic pipe (closed and open piping systems) penetrating concrete floors, the following products are acceptable:

1. Hilti CP 680 Cast-In-Place Firestop Device

C. For penetrations by non-combustible items including steel pipe, copper pipe, rigid steel conduit and electrical metallic tubing (EMT), the following materials are acceptable:

1. Hilti FS 601 Elastomeric Firestop Sealant
2. Hilti FS-ONE High Performance Intumescent Firestop Sealant
3. 3M Fire Stop Sealant 2000
4. 3M Fire Barrier CP25 WB
5. Tremco Tremstop Fyre-Sil Sealant

D. For fire-rated construction joints and other gaps, the following materials are acceptable:

1. Hilti FS 601 Elastomeric Firestop Sealant
2. Hilti CP 601s Elastomeric Firestop Sealant
3. Hilti CP 606 Flexible Firestop Sealant
4. Hilti CP 672 Firestop Joint Spray
5. 3M Firestop Sealant 2000
6. Tremco Tremstop Fyre-Sil Sealant

E. For penetrations by combustible items (penetrants consumed by high heat and flame) including insulated metal pipe, PVC jacketed, flexible cable or cable bundles and plastic pipe (closed piping systems), the following materials are acceptable:

1. Hilti FS-ONE High Performance Intumescent Firestop Sealant
2. Hilti CP 618 Firestop Putty
3. Hilti CP 642 Firestop Jacket
4. Hilti CP 643 Firestop Jacket
5. 3M Fire Barrier CP25 WB
6. 3M Fire Barrier FS-195 Wrap/Strip
7. Tremco Tremstop WBM Intumescent Firestop Sealant

F. For penetrations by combustible plastic pipe (open piping systems), the following materials are acceptable:
   1. Hilti CP 642 Firestop Jacket
   2. Hilti CP 643 Firestop Jacket
   3. Hilti FS-ONE High Performance Intumescent Firestop Sealant
   4. 3M Fire Barrier PPD Plastic Pipe Device

G. For large size/complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways, the following materials are acceptable:
   1. Hilti FS 635 Trowelable Firestop Compound
   2. Hilti FIRE BLOCK
   3. 3M Firestop Foam 2001
   4. 3M Fire Barrier CS-195 Composite Sheet

H. For openings between structurally separate sections of walls and floors, top-of-walls, the following materials are acceptable:
   1. Hilti FS 601 Elastomeric Firestop Sealant
   2. Hilti CP 601s Elastomeric Firestop Sealant
   3. Hilti CP 606 Flexible Firestop Sealant
   4. Hilti FS-ONE High Performance Intumescent Firestop Sealant
   5. 3M Fire Barrier CP 25 WB

I. Provide a firestop system with an “F” Rating as determined by UL 1479 or ASTM E814 which is equal to the time rating of construction being penetrated.

J. Provide a firestop system with an Assembly Rating as determined by UL 2079 which is equal to the time rating of construction being penetrated.

PART 3 - EXECUTION

3.01 PREPARATION

A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

   1. Verify penetrations are properly sized and in suitable condition for application of materials.
   2. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, laitance, release agents, water repellents, and any other substances that may affect proper adhesion.
   3. Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.
   4. Comply with manufacturer’s recommendations for temperature and humidity conditions before, during and after installation of firestopping.
5. Do not proceed until unsatisfactory conditions have been corrected.

3.02 COORDINATION

A. Coordinate location and proper selection of cast-in-place Firestop Devices with trade responsible for the work.

B. Responsible trade to provide adequate spacing of field run pipes to allow for installation of cast-in-place firestop devices without interferences.

3.03 INSTALLATION


B. Manufacturer’s Instructions: Comply with manufacturer’s instructions for installation of through-penetration materials.
   1. Seal all holes or voids made by penetrations to ensure an air and water resistant seal.
   2. Consult with mechanical engineer, project manager prior to installation of UL firestop systems that might hamper the performance of fire dampers as it pertains to duct work.
   3. Protect materials from damage on surfaces subjected to traffic.

3.04 FIELD QUALITY CONTROL

A. Examine sealed penetration areas to ensure proper installation before concealing or enclosing areas.

B. Keep areas of work accessible until inspection by applicable code authorities.

C. Perform under this section patching and repairing of firestopping caused by cutting or penetrating of existing firestop systems already installed by other trades.

3.05 ADJUSTING AND CLEANING

A. Remove equipment, materials and debris, leaving area in undamaged, clean condition.

B. Clean all surfaces adjacent to sealed holes and joints to be free of excess firestop materials and soiling as work progresses.

END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDED

A. Preparing sealant substrate surfaces.
B. Sealant and backing.

1.02 RELATED SECTIONS

A. Section 03 30 00 - Cast in Place Concrete
B. Section 06 10 00 - Carpentry
D. Section 07 62 00 - Sheet Metal Flashings and Trim
E. Section 08 13 16 - Custom Hollow Metal Doors and Frames
F. Section 08 41 13 - Aluminum-Framed Entrances and Storefronts
G. Section 09 21 16 - Gypsum Board Assemblies

1.03 SUBMITTALS

A. Submit samples and product data under provisions of General Conditions and Section 01 33 00.
B. Submit product data indicating sealant chemical characteristics, performance criteria, limitations, and color availability.
C. Submit two samples illustrating colors selected.
D. Submit manufacturer's installation instructions under provisions of General Conditions and Section 01 34 00.
E. Submit manufacturer's certificate that products meet or exceed specified requirements.

1.04 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum three years documented experience.
B. Applicator: Company specializing in applying the work of this Section with minimum three years documented experience.

C. Conform to Sealant Waterproofing and Restoration Institute requirements for materials and installation.

1.05 ENVIRONMENTAL REQUIREMENTS

A. Do not install solvent curing sealants in enclosed building spaces.

B. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.06 SEQUENCING AND SCHEDULING

A. Coordinate work under provisions of Section General Conditions and Section 01 33 00.

B. Coordinate the work of this Section with all Sections referencing this Section.

1.07 WARRANTY

A. Provide a five (5) year warranty on materials and workmanship.

PART 2 - PRODUCTS

2.01 SEALANT MANUFACTURERS

A. Tremco

B. Pecora

C. Dap

D. Dow

E. General Electric

2.02 SEALANTS

A. Sealant for interior use between joints and unlike materials: Silicone, conform to TT-S-002306, ASTM C920, FS TT-S-01543, Type II, Class A, low modular type.

B. Sealant at fire rated walls, around pipe, conduit, and other wall penetrations: Dow Coming Fire Stop sealant, floor/wall penetration seal design System 129, UL classified.

C. Sealant for exterior uses and penetrations in exterior walls. One part urethane type II conforming to the requirements of FS TT-S-2300, Tremco Dymonic, or Pecora Dynatrol 1.
2.03 **ACCESSORIES**

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Expanded or extruded closed-cell polyethylene for joint open in back and joints requiring filler to create proper depth and polyethylene bond breaker tape for joints closed in back.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

**PART 3 - EXECUTION**

3.01 **EXAMINATION**

A. Verify that surfaces and joint openings are ready to receive work and field measurements are as shown on Drawings and recommended by the manufacturer.

B. Beginning of installation means installer accepts existing surfaces.

3.02 **PREPARATION**

A. Clean joints in accordance with manufacturer's instructions.

B. Remove loose materials and foreign matter which might impair adhesion of sealant.

C. Verify that joint backing and release tapes are compatible with sealant.

D. Perform preparation.

E. Protect elements surrounding the work of this Section from damage or disfiguration.

3.03 **INSTALLATION**

A. Install sealant in accordance with manufacturer's instructions.

B. Measure joint dimensions and size materials to achieve required width/depth ratios.

C. Install joint backing to achieve a neck dimension no greater than 1/3 the joint width.

D. Install bond breaker where joint backing is not used.

E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

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CCSU PROJECT NO: 22-89
January 27, 2016; 3 of 4
G. Tool joints concave.

3.04 CLEANING AND REPAIRING

A. Clean work under provisions of General Conditions and Supplemental General Conditions.

B. Clean adjacent soiled surfaces.

C. Repair or replace defaced or disfigured finishes caused by work of this Section.

3.05 PROTECTION OF FINISHED WORK

A. Protect finished installation under provisions of General Conditions and Supplemental General conditions.

B. Protect sealants until cured.

END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDED

A. Custom fabricated rated and non-rated and fire rated steel doors, and frames.

B. Fire rated assemblies.

1.02 RELATED WORK

A. Section 05 50 00 - Metal Fabrications.

B. Section 08 71 00 - Door Hardware.

C. Section 09 21 16- Gypsum Board Assemblies

D. Section 09 90 00 – Painting and Coating

1.03 REFERENCES

A. ASTM A525 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot Dip Process, General Requirements.

B. DHI - Door Hardware Institute: The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder’s Hardware.

C. NAAMM CHM - Custom Hollow Metal Doors (Section 7).

D. NAAMM CHM - Fire Rated Custom Metal Doors and Frames (Section 8).

E. NFPA 252 - Fire Tests of Door Assemblies.

F. UL 10B - Fire Tests of Door Assemblies.

1.04 QUALITY ASSURANCE

A. Conform to requirements of NAAMM CHM-1-74 as supplemented in this section.

B. Fire-rated door and frame construction conform to UL 10 B. B label doors to be 1-1/2 hr. rated.
C. Installed frame and door assembly to conform to NFPA 80 for fire rated class indicated.

1.05 REGULATORY REQUIREMENTS


1.06 SHOP DRAWINGS AND PRODUCT DATA

A. Submit shop drawings and product data under provisions of General Conditions and Section 01 33 00.

B. Indicate frame configuration, anchor spacings, anchor types, and location of cutouts for hardware and reinforcement.

C. Indicate door elevations, stile and rail reinforcement and closure method, and cutouts for glazing.

D. Submit manufacturer's installation instructions under provisions of General Conditions and Section 01 33 00.

1.07 DELIVERY, STORAGE, AND PROTECTION

A. Protect products under provisions of General Conditions and Section 01 60 00.

B. Protect doors and frames with resilient packaging, sealed with heat shrunk plastic.

C. Break seal on-site to permit ventilation.

1.08 WARRANTY

A. Provide five year manufacturer's warranty under provisions of General Conditions.

B. Warranty for face distortion, warping, defective materials, and exterior weather-stripping.

PART 2 - PRODUCTS

2.01 BASIC MATERIALS

A. Sheet steel for frames shall be hot rolled prime quality carbon steel.

B. Sheet steel for doors shall be cold rolled stretcher level sheet steel.
2.02 FRAMES

A. Frames shall be combination buck, frame and trim type, rated and non-rated frames.

B. Minimum gauges: 16 gauge interior frames. 14 gauge exterior frames.

C. Brake-form steel sheets:
   1. Provide profiles and shapes free of warp, buckles, fractures, or other defects.
   2. Form stop integral with frames unless otherwise shown.

D. Corners and connections shall be mitered and welded with exposed welds ground flush and smooth.

E. Hardware Reinforcement: NAAM CHM-1-74.

F. Anchors:
   1. Provide an anchor at each jamb for each 2'-6" of door height or fraction thereof.
   2. Vary anchor types to provide positive fastening to adjacent construction.
   3. Secure a metal clip angle at bottom of each jamb member for anchoring to floor, with a minimum of two fasteners.
   4. Provide high hat reinforcing and countersunk holes for lag bolting frames to existing construction. Lag bolting accepted only at existing masonry openings.

G. Stops and Trim:
   1. Applied stops shall be formed of 20 ga. steel, comer made to a close, neat fit, and secured at 12" intervals with countersunk sheet metal screws.

2.03 DOORS

A. Face sheets shall be 18 ga. steel for interior doors and 16 ga. steel for exterior doors.
B. Construction:

1. Vertical edges of face panels shall be joined and welded, then ground smooth to conceal seams.

C. Epoxy bond, resin impregnated honeycomb core to face sheets for interior doors, polyurethane insulation for exterior doors, and mineral fiberboard for label doors.

D. Glazing Stops: 20 ga. steel, secured with countersunk sheet metal screws at minimum 13” intervals.

2.04 ACCESSORIES

A. Jamb Anchors: As required for various wall construction.

B. Silencers: Resilient rubber.

C. Glazing Bars: Rolled steel channel shape, square corners; prepared for countersink style tamperproof screws at 12” o.c. minimum.

2.05 PROTECTIVE COATINGS

A. Bituminous Coating: Fibered asphalt emulsion.

B. Primer: Factory coat of primer to be applied over galvanized steel for field painting.

2.06 FABRICATION

A. Fabricate frames and assemble as a complete welded unit.

B. Fabricate frames and doors with hardware reinforcement plates welded in place.

C. Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.

D. Prepare frame for silencers. Provide three single silencers for single doors and mullions of double doors on strike side and two single silencers on frame head at double doors without mullions.

D. Attach fire rated label to each frame, panel and door unit.

F. Close top edge of exterior door with inverted steel channel closure. Seal joints watertight.
DIVISION 8
SECTION 08 13 16
CUSTOM HOLLOW METAL
DOORS AND FRAMES

2.07 FINISH

A. Interior Units: factory coat of rust inhibitive metal primer for field painting.

B. Exterior Units: 1.25 oz/sq ft galvanized.

C. Primer: Air-dried.

D. Finish: Field painting specified Section 09 90 00.

E. Coat inside of frame profile with bituminous coating to a thickness of 1/16 inch.

F. Door and frames shall be leveled and ground smooth. Apply mineral filler to eliminate weld scar and other blemishes.

2.08 PREPARATION OF FINISH HARDWARE

A. Prepare doors and frames to receive hardware:

1. Hardware supplier shall furnish hollow metal manufacturers approved hardware schedule, hardware templates, and samples of physical hardware where necessary to insure correct fitting and installation.

2. Preparation includes sinkages, mortar and dust boxes, and cut-outs for mortise and concealed hardware and rubber silencers.

B. Provide reinforcements for both concealed and surface applied hardware:

1. Drill and tap mortise reinforcements at factory, using templates.

2. Install reinforcements with concealed connections designed to develop full strength of reinforcements.

PART 3 - EXECUTION

3.01 INSTALLATION

1. Install frames in accordance with NAAMM CHM.

2. Install doors in accordance with DHI.

3. Coordinate with masonry construction and steel fabrication for anchor placement.

4. Install glazing.
5. Wherever possible, leave frame spreader bar intact until frames are set plumb and square, and anchors are secured.

6. Apply hardware in accord with hardware manufacturer's templates and instructions.

7. Adjust operable parts for correct function.

8. Remove hardware, with the exception of prime coated items, tag, box and reinstall after finish paint work is completed.


10. Doors shall be hung with 1/16" space at head and jambs with 3/16" clearance over thresholds, 3/8" where no thresholds occurs. Clearance at pairs of doors shall be minimum required for operation. Clearance between pairs of smoke doors must be maintained to meet U.L. and manufacturer's label requirements without mullion or astragal.

3.02 PRIME COAT TOUCH-UP

A. Immediately after erection, areas where prime coat has been damaged shall be sanded smooth and touched up with same primer as applied at shop.

B. Remove rust before above specified touch-up is applied.

C. Touch-up shall not be obvious.

3.03 PROTECTION

A. Protect installed hollow metal work against damage from other construction work.

3.04 TOLERANCES

A. Maximum Diagonal Distortion = 1/16 inch measured with straight edge, corner to corner.

B. 1/8" over thresholds.

3.05 ADJUSTING AND CLEANING

A. Adjust for smooth and balanced door movement.

END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDED

A. Aluminum Storefront.

1.02 RELATED WORK

A. Section 07 90 00 - Joint Protection

B. Section 08 81 00 - Glazing

1.03 REFERENCES


B. ANSI/ASTM B221 - Aluminum Alloy Extruded Bar, Rod, Wire, Shape and Tube.

C. ANSI/ASTM E283 - Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors.


E. ASTM B209 - Aluminum and Aluminum Alloy Sheet and Plate.

1.04 SYSTEM DESCRIPTION

A. Aluminum storefront type frames - 2" x 4-1/2" nominal dimension; Thermal; Center; Screw Spline, Shear Block, Stick and Punched Opening Fabrication.

B. Glazing: Insulated glass.

1.05 QUALITY ASSURANCE

A. Store front system shall be by a single manufacturer.

B. Installer experienced to perform work of this section who has specialized in the installation of work similar to that required for this project and who is acceptable to product manufacturer.
C. Manufacturer experienced in manufacturing products that meets the requirements of this specification and has such experience for a minimum of ten years.

1.06 PERFORMANCE REQUIREMENTS

A. Store Front System:

1. System including anchorage shall be capable of withstanding wind load forces based on the latest edition(s) of the Connecticut Building Code enacted at the time of the bid of this project.

2. Air infiltration: air infiltration rate shall not exceed 0.06 cfm/sf at a static air pressure differential of 6.24 psf - ASTM E 283.

3. Water resistance: there shall be no leakage at a minimum static air pressure differential of 8 psf as defined in AAMA 510 - ASTM E 331.

1.07 SUBMITTALS

A. Submit shop drawings and product data under provisions of general conditions and Section 01 30 00.

B. Shop drawings shall be prepared in conjunction with field measurements, review construction requirements of other trades and verification of field conditions.

C. Shop drawings shall include overall curtain wall opening and component dimensions; wall opening tolerances required; anchorage and fasteners; affected related work; and installation requirements.

D. Submit color chart of Aluminum systems and insulating panel system.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver and handle door units under provisions of Section 01 60 00.

B. Store and protect door units under provisions of Section 01 60 00.

C. Provide wrapping to protect prefinished aluminum surfaces.

D. Store doors in upright position off ground on dunnage.

1.09 WARRANTY

A. Provide manufacturer’s warranty under provisions of Section 01 70 00.

1. Storefront system: Two years
B. Warranty: Cover complete storefront and window systems, remain plumb, true, against warpage, twisting, racking or separation.

PART 2 – PRODUCTS- products specific are based on proprietary products. Products equal to those specified are acceptable as long as information about the equal products with comparison to the specified projects is supplied to the Architect for approval during bidding.

2.01 STOREFRONT SYSTEM (BASED ON KAWNEER- Tribab VG 451T (THERMAL) STOREFRONT SYSTEM

A. Framing Member Profile: 2” x 4-1/2” system dimension, center glazed.

B. Each framing member shall provide structural strength to meet specified performance requirements. Provide internal reinforcing as required to achieve design drawing configuration

C. Reference to tolerances for wall thickness and other cross-sectional dimensions of curtain wall members are nominal and in compliance with AA aluminum Standards and Data.

D. MATERIALS

1. Aluminum Extrusions: Alloy and temper recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070” wall thickness at any location for the main frame and complying with ASTM B 221: 6063-T6 alloy and temper.

2. Fasteners: Aluminum, nonmagnetic stainless steel or other materials to be non-corrosive and compatible with aluminum window members, trim hardware, anchors, and other components.

3. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.

4. Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.
5. Sealant: For sealants required within fabricated storefront system, provide permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.

6. Tolerances: Reference to tolerances for wall thickness and other cross-sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and Data.

E. STOREFRONT FRAMING SYSTEM

1. Thermal Barrier (Trifab® VG 451T):
   a. Kawneer IsoLock® Thermal Break with a 1/4" (6.4 mm) separation consisting of a two-part chemically curing, high-density polyurethane, which is mechanically and adhesively joined to aluminum storefront sections.
      i. Thermal Break shall be designed in accordance with AAMA TIR-A8 and tested in accordance with AAMA 505.

2. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials. Where exposes shall be stainless steel.

3. Perimeter Anchors: When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.

4. Packing, Shipping, Handling and Unloading: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

5. Storage and Protection: Store materials protected from exposure to harmful weather conditions. Handle storefront material and components to avoid damage. Protect storefront material against damage from elements, construction activities, and other hazards before, during and after storefront installation.

F. GLAZING SYSTEMS

1. Glazing: As specified in Division 08 Section "Glazing."

2. Glazing Gaskets: Manufacturer's standard compression types; replaceable, extruded EPDM rubber.


4. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.
2.02 **FINISHES FOR ALL ALUMINUM PRODUCTS**

A. Interpon D2000, AAMA 2604, Power Coating.

B. Color to be selected from manufacturer’s full range of standard colors, TME.

2.03 **MATERIALS**

A. Aluminum extrusions shall be:

1. Wall thickness: .125”
2. Alloy: 6063
3. Temper: T5

B. Fasteners:

1. All exposed fasteners shall be aluminum or stainless steel.

C. Accessory Materials:

1. Bituminous Paint: Cold-applied, asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos; formulated for 30 mil thickness per coat.

2.47 **FABRICATION**

A. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fit joints; make joints flush, hairline and weatherproof.
3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
4. Physical and thermal isolation of glazing from framing members.
5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

B. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.
C. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.

D. Storefront Framing: Fabricate components for assembly using manufacturer's standard installation instructions.

E. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

**PART 3 - EXECUTION**

3.01  **INSPECTION**

A. Verify openings are ready to receive work of this Section.

B. Beginning of installation means acceptance of existing conditions.

3.02  **INSTALLATION**

A. Install storefront system, door, window system and insulating panels and hardware in accordance with manufacturer's instructions.

C. Use anchorage devices to securely attach frame to structure.

D. Align window and storefront frame plumb and level, free of warp or twist. Maintain dimensional tolerances, aligning with adjacent work.

E. Install perimeter sealant, backing materials, and installation requirements in accordance with Section 07 90 00. Apply sealant to ends of sill for watertight seal.

3.03  **CLEANING**

A. Remove protective material from prefinished aluminum surfaces.

B. Wash down exposed surfaces using a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.

C. Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.

**END OF SECTION**
PART 1 - GENERAL

RELATED DOCUMENTS

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

1.01 WORK INCLUDED

A. This section includes Electric, fully automatic deluxe sliding service window and Air Curtain as indicated in drawings and in sections.

1.02 SUBMITTALS

A. Product Data: Submit Manufacturer’s technical product data substantiating that products comply.

B. Shop Drawings: Submit for fabrication and installation of windows. Include details, elevations and installation requirement of finish hardware and cleaning.

C. Certification: Provide printed data in sufficient detail to indicate compliance with the Contract Documents.

1.03 DELIVERY, STORAGE AND HANDLING

A. Deliver windows crated to provide protection during transit and job storage.

B. Inspect windows upon delivery for damage. Unless minor defects can be made to meet the Architect’s specifications and satisfaction, damaged parts should be removed and replaced.

C. Store windows at building site under cover in dry location.

1.04 PROJECT CONDITIONS

A. Field measurements: Check opening by accurate field measurement before fabrication. Show recorded measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.

1.05 WARRANTY

A. All material and workmanship shall be warranted against defects for a period of 18 months.
PART 2 – PRODUCTS

2.01   ACCEPTABLE MANUFACTURERS

A. Basis of design: Design is based on aluminum (EDW) series, Electric Fully Automatic Deluxe Sliding Service Window manufacturer by C.R. Laurence Co., Inc. (800) 421-6144, www.crlaurence.com with mars model LPV248-E1 Air Curtain.


2.02   MATERIALS

A. Frames: 4-1/2” Aluminum frame modules shall be constructed of 6063-T5 extruded aluminum. Replacement and servicing of glass shall be from the clerk side of the window by means of an access panel in the top header and does not require the removal of the frame from the opening. Window glides on top-hung heavy-duty ball bearing slides. Poly-pile weather stripping. With thumbturn lock and locked/unlocked indicator. Infrared sensing device and an on/off/manual switch enclosed in a stainless steel housing. Overall frame sizes are to be in accordance with the contract drawings. Safety features include 24V DC UL/CSA Approved Class 2 Transformer, Auto Reverse if window is blocked, “Soft Close” feature in “Pinch Zone” and a Mechanical Positive Slip Clutch.

B. Finish: All aluminum to be powder or Ky nar painted (color as selected by Architect).

C. Glazing: The glazing is tempered insulating glass.

D. Stainless steel sill with control panel enclosed.

PART 3 – EXECUTION

3.01   INSTALLATION

A. Install window in accordance with manufacturer’s printed instructions and recommendations. Repair damaged units as directed (if approved by the manufacturer and the architect) or replace with new units.

3.02   CLEANING

A. Clean frame and glazing surfaces after installation, complying with requirements contained in the manufacturer’s instructions. Remove excess glazing sealant compounds, dirt or other substances.
3.03 PROTECTION

A. Institute protective measures required throughout the remainder of the construction period to ensure that all the windows do not incur any damage or deterioration, other than normal weathering, at the time of acceptance.

END OF SECTION
PART I – GENERAL

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDES

A. Door hardware for swing door.

1.02 SUBMITTALS

A. PRODUCT DATA

1. Submit catalog cuts and/or product data sheets of hardware specified.

B. 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. Catalog cut.
   b. Hardware installation and adjustment instructions.
   c. Manufacturer’s written warranty information.

1.03 QUALITY ASSURANCE

A. 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 least 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.
1.04  DELIVERY, STORAGE AND HANDLING

A.  DELIVERY

1. The supplier shall deliver hardware to the project site in its original package. At time of hardware delivery, door openings supplier in conjunction with the contractor shall confirm the correct item.

1.05  WARRANTY

A. The closer shall be warranted in writing by the manufacturer against failure due to defective materials and workmanship for a minimum period of Ten (10) years 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.

PART II – PRODUCTS

2.01  MANUFACTURERS

A. Only manufacturers as listed below shall be accepted.

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. HARDWARE

1. Cylindrical Locksets, See Specification Section 01019 Allowance #5. Core provided by CCSU.
   a) Acceptable Manufacturers:
      1. "Persona" Passport 1000 P2 cylindrical lockset.

2. Door Protective Trim

   1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.

   2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required
where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Metal Protection Plates: ANSI/BHMA A156.6 certified metal protection plates (kick, armor, or mop), beveled on four edges (B4E), fabricated from the following:
   a. Stainless Steel: 300 series, 050-inch thick, with countersunk screw holes (CSK).

4. Fasteners: Provide manufacturer’s designated fastener type as specified in the Hardware Sets.

5. Acceptable Manufacturers:
   a. Burns Manufacturing (BU).
   b. Rockwood Manufacturing (RO).
   c. Trimco (TC).

PART III – EXECUTION

3.01 INSTALLATION
   A. Install closer per manufacturer’s directions.

3.02 ADJUSTING, CLEANING, AND DEMONSTRATING
   A. Adjust closer so that the force required to open the door meets ICC/ANSI A117 and ADA requirements.

3.03 DOOR HARDWARE SCHEDULE
   A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

B. Manufacturer’s Abbreviations:
   1. PE - Pemko
   2. MK - McKinney
   3. SU - Securitron
   4. RO - Rockwood
   5. RU - Corbin Russwin
   6. RF - Rixson
   7. NO - Norton
### Set: Door #DX10190

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<td>Allowance #5</td>
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<td>1 Interchangeable Core</td>
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END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDED

A. Provide glass and glazing and window film for Sections referencing this Section for products and installation.

1.02 RELATED WORK

A. Section 07 90 00 - Joint Protection
B. Section 08 41 13 - Aluminum-framed entrances and storefronts

1.03 REFERENCES

B. American National Standards Institute
C. Underwriter's Laboratory Incorporated

1.04 PERFORMANCE REQUIREMENTS

A. Glass and glazing materials of this Section shall provide continuity of building enclosure vapor and air barrier:
   1. To utilize the inner pane of multiple pane sealed units for the continuity of the air and vapor seal.
   2. Maintain continuous air and vapor barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.

B. Size glass to withstand dead loads and positive and negative live loads acting normal to plane of glass as measured in accordance with ANSI/ASTM E330.

C. Limit glass deflection to 1/200 flexure limit of glass with full recovery of glazing materials, whichever is less.
1.05 **Submittals**

A. Submit under provisions of General Conditions and Section 01 33 00.

B. **Product Data on Glass Types Specified:** Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.

C. **Product Data on Glazing Compounds:** Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.

D. **Samples:** Submit two samples 12" x 12" each type of glass, illustrating glass coloration and design.

E. **Samples:** Submit two samples of glazing sealant, color as selected.

F. **Samples:** Submit two samples of gaskets employed, 12 inches long.

G. **Manufacturer's Installation Instructions:** Indicate special precautions required.

H. **Manufacturer's Certificate:** Certify that sealed insulated glass, meet or exceed specified requirements.

1.06 **Quality Assurance**


B. Maintain one copy of each document on site.

C. Fire rated glazing shall comply with NFPA 80.

D. Fire windows shall comply with NFPA 257 and NFPA 80.


1.07 **Environmental Requirements**

A. Do not install glazing when ambient temperature is less than 50 degrees F.

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.08 **Field Measurements**

A. Verify that field measurements are as indicated on Drawings.
1.09 COORDINATION

A. Coordinate Work under provisions of General Conditions and Section 01039.

B. Coordinate the Work with glazing frames, wall openings, and perimeter air and vapor seal to adjacent Work.

1.10 WARRANTY

A. Provide ten year manufacturer's warranty under provisions of General Conditions and Section 01 78 30.

B. Warranty: Include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

A. Glass
   1. PPG, Inc.
   2. Libbey-Owens-Ford Inc.
   3. Guardian Industries

2.02 MATERIALS

A. Tinted Insulating glass: Exterior - “Solargray and Solargate 555” by PPG Inc. or equal.

   1. Insulating glass units shall be made of two pieces of 1/4” glass separated by clear argon filled 1/2” air space hermetically sealed. Inner glass shall be LOW-E clear or White Laminated Safety Glass (designated by half tone on drawings), outer glass shall be clear float glass, Federal Specification DD-G-451, Type I, Class 1, Quality 93. Provide safety glass for inner and outer lights with glass 24” or less above finish floor; and all glass 60” or less above finish floor and within a 24” arc of a door edge.

2.03 APPLIED GLAZING FILM

A. Applied White Mat Privacy Glazing Film as manufactured by: 3M Window Film, which is located at: 3M Center Bldg. 0235-02-S-27; St. Paul, MN 55144-1000; Toll Free Tel: 866-499-8857; Tel: 651-733-2222; Fax: 651-737-3446; Email: request info (jemannix@mmm.com); Web: www.3m.com/windowfilm. Install on existing glass panels and interior side of exterior insulated glass as indicated on drawings per manufacturers instructions.
B. Alternate Manufacturers: Eastman Chemical Performance Films Division - Gila Film Products, 575 Mayville Service, St. Louis, MO 63141 or Etch Art, LLC, 3732 N. US Hy 1, #5, Cocoa, FL 32926 (800) 320-8439.

2.04 SEALANT

A. One part silicone rubber, FS TT-S-001543, non-sag type, Class A.

2.05 ACCESSORIES

A. Setting Blocks: Neoprene, 70-90 Shore "A" durometer hardness, chemically compatible with sealant used.

B. Spacers: Neoprene, 40-50 Shore "A" durometer hardness, chemically compatible with sealant used.

C. Filler Rod: Compressible synthetic rubber or foam, chemically compatible with sealant used.

D. Primer-Sealers and Cleaners: As recommended by glass and sealant manufacturer.

E. Glazing Tape: 1/8" Butyl-polyisobutylene sealant with built-in spacer of synthetic rubber. AAMA 804.1.

2.06 COMPATIBILITY

A. All components of glazing system must be compatible.

PART 3 - EXECUTION

3.01 INSPECTION

A. Check that glazing channels are free of burrs, irregularities, and debris.

B. Check that glass is free of edge damage or face imperfections.

C. Do not proceed with installation until conditions are satisfactory.

3.02 PREPARATION

A. Field Measurements

1. Measure size of frame to receive glass.

2. Compute actual glass size, allowing for edge clearances.
B. Preparation of Surfaces

1. Remove protective coatings from surfaces to be glazed.

2. Clean glass and glazing surfaces, to remove dust, oil and contaminants, and wipe dry.

3.03 INSTALLATION

A. Apply primer-sealer to joint surfaces as recommended by sealant and glass manufacturer.

B. Do not cut, seam, nip, or abrade tempered glass.

C. Glazing in interior walls.

1. See drawing details.

3.04 QUALITY CONTROL

A. Field inspection will be performed under provisions of General Conditions and Supplemental General Conditions.

B. Inspection will monitor quality of glazing.

3.05 MANUFACTURER'S FIELD SERVICES

A. Glass and glazing product manufacturers to provide field surveillance of the installation of their products under provisions of General Conditions and Supplemental General Conditions.

B. Monitor and report installation procedures and unacceptable conditions.

3.06 CLEANING

A. Clean work under provisions of General Conditions and Supplemental General Conditions.

B. Remove glazing materials from finish surfaces.

C. Remove labels after work is complete.

D. Clean glass.

3.07 PROTECTION OF FINISHED WORK

A. Protect finished Work under provisions of General Conditions and Supplemental General Conditions.
PART 1 GENERAL

1.1 GENERAL REQUIREMENTS
   A. Work of this Section, as shown or specified, shall be in accordance with the Contract Documents.

1.2 SECTION INCLUDES
   A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the gypsum board assemblies as shown on the drawings and/or specified herein, including, but not limited to, the following:
      1. Gypsum board work for partitions, ceilings, column enclosures, furring, and elsewhere where gypsum drywall work is shown on drawings.
      2. Metal supports for gypsum drywall construction.
      3. Acoustical insulation for gypsum drywall work.
      4. Sealant for gypsum drywall work.
      5. Concealed metal reinforcing for attachment of railings, toilet partitions and other items supported on drywall partitions and walls.
      6. Taping and finishing of drywall joints.
      7. Installing rings and frames in drywall surfaces for grilles, registers and lighting fixtures.

1.3 RELATED SECTIONS
   A. Miscellaneous Metals – Section 05 50 00.
   B. Steel Door and Frames - Section 08 13 16.
   C. Painting and Finishing - Section 09 91 00.

1.4 QUALITY ASSURANCE
   A. The following standards, as well as other standards which may be referred to in this Section, shall apply to the work of this Section:
   B. Allowable Tolerances: 1/32" offsets between planes of board faces, and 1/16" in 8'-0" for plumb, level, warp and bow.
C. System Design Load

1. Provide standard drywall wall assemblies designed and tested by manufacturer to withstand a lateral load of 5 lbs. per sq. ft. for the maximum wall height required, and with deflection limited to L/240 of partition height.

   a. Drywall assemblies with tile finish shall have a deflection limit of L/360.

2. Provide drywall ceiling assemblies designed, fabricated and installed to have a deflection not to exceed L/360.

D. Fire-Resistance Rating: Where gypsum drywall with fire resistance ratings are indicated, provide materials and installations which are identical with those of applicable assemblies tested per ASTM E 119 by fire testing laboratories, or to design designations in UL "Fire Resistance Directory" or in listing of other testing agencies acceptable to authorities having jurisdiction, and compliant with UL Test #2079; criteria for cycle movement for all field height wall sections requiring allowance for vertical deflection within framing details.

E. Installer: Firm with not less than 5 years of successful experience in the installation of specified materials.

1.5 SUBMITTALS

A. Submit shop drawing for each drywall partition, furring and ceiling system showing size and gauges of framing members, hanger and anchorage devices, wallboard types, insulation, sealant, methods of assembly and fastening, control joints indicating column lines, corner details, joint finishing and relationship of drywall work to adjacent work.

B. Samples: Each material specified herein, 12" x 12", or 12" long, or in manufacturer's container, as applicable for type of material submitted.

C. Manufacturer's Literature: Submit technical and installation instructions for each drywall partition, furring and ceiling system specified herein, and for each fire-rated and sound-rated gypsum board assembly. Submit other data as required to show compliance with these specifications, including data for mold resistant joint compound.

D. Test Reports: This Contractor shall submit test report, obtained by drywall manufacturer, indicating conformance of drywall assemblies to required fire ratings and sound ratings.

1.6 PRODUCT HANDLING AND PROTECTION

A. Deliver, store and handle drywall work materials to prevent damage. Deliver materials in their original, unopened containers or bundles, and store where protected from moisture, damage and from exposure to the elements. Store wallboard in flat stacks.
B. Protect wallboard from becoming wet.

1.7 ENVIRONMENTAL CONDITIONS

A. Provide and maintain minimum temperature of fifty-five (55) degrees F. and adequate ventilation to eliminate excessive moisture within the building in the area of the drywall work for at least twenty-four (24) hours, prior to, during and after installation of drywall work. Installation shall not start until windows are glazed and doors are installed, unless openings are temporarily closed. Space above suspended ceilings shall be vented sufficiently to prevent temperature and pressure build up.

1.8 SAMPLE PANEL

A. At a suitable location, where directed by the Architect, lay up a portion of a finished wall and ceiling demonstrating the quality of work, including finishing, to be obtained under this Section. Omit drywall boards in locations as directed by the Architect to show stud spacing and attachments; after acceptance, complete assembly.

B. Adjust the finishing techniques as required to achieve the finish required by the Architect as described in this Section of these specifications.

C. Upon approval of the sample panel and if acceptable to the Architect, the sample panel may be left in place as a portion of the finished work of this Section.

D. All drywall work shall be equal in quality to approved sample panel.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers for Gypsum Drywall Panels and Accessories: U.S. Gypsum Co., Georgia Pacific, Lafarge North America, or National Gypsum Co. meeting specification requirements are acceptable.

1. All drywall products must be manufactured in North America.

B. Acceptable Manufacturers for Metal Supports of Drywall Assemblies: Unless otherwise noted, provide products manufactured by Dietrich Metal Framing, Super Stud Building Products, Marino/Ware, Clark Western or approved equal.

2.2 METAL SUPPORTS

A. Metal Floor and Ceiling Runners

1. Channel Type: Formed from 20 U.S. Std. gauge (unless otherwise noted) galvanized steel, width to suit channel type metal studs. Use 20 ga. top runners with 1-1/4" minimum flanges.
2. Ceiling runners and head of wall connections at rated partitions shall conform to UL #2079 for cycle movement. Provide positive mechanical connection of framing to structure, allowing for vertical movement within connections. Minimum of 20 ga. galvanized steel for clips, 25 ga. galvanized steel for ceiling runners. Providing a friction free – anti-seize movement capacity.

   a. As manufactured by the Steel Network, VertiClip or VertiTrack or equal made by Metal-Lite Inc.
   b. FireTrak (including stud clips) by FireTrak Corp. or equal made by Metal-Lite Inc.

3. "J" Type: Formed from 20 U.S. Std. gauge galvanized steel, 1" x 2-1/2" or 4" wide (to suit detail) x 2-1/4" (for shaft wall).

B. Metal Studs, Framing and Furring

1. Channel Type Studs: Channel type with holes for passage of conduit formed from minimum 20 U.S. Std. gauge (unless heavier gauge is required to meet deflection limits) galvanized steel, width as shown on drawings.

2. Furring Channels: Hat shaped, formed from galvanized steel, 25 U.S. Std. gauge.

3. "C-H," "CT," or "I" Type Stud: 1-1/2" x 2-1/2", 4" or 6" wide (to suit detail) galvanized steel. Use for shaft wall construction; gauge and size as required to meet deflection limits given herein.

4. Double "E" Type Stud or "J" Track with Holding Tabs: 1" x 2-1/2", 4" or 6" wide (to suit detail) galvanized steel. Use for shaft wall construction; gauge and size as required to meet deflection limits given herein.

5. Continuous 16 gauge x 8" wide steel wall plate screwed to studs as required for support of railings, toilet partitions and other items supported on drywall partitions and walls.

C. Suspended Ceiling and Fascia Supports

1. Main Runners: 1-1/2" steel channels, cold rolled at 0.475 lbs. per ft., rust-inhibitive paint finish.


3. Hangers: Galvanized, 1" x 3/16" flat steel slats capable of supporting 5x calculated load supported.

4. Hanger Anchorages: Provide inserts, clips, bolts, screws and other devices applicable to the required method of structural anchorage for ceiling hangers. Size devices for 5x calculated load supported.
5. Furring Anchorages: 16 ga. galvanized wire ties, manufacturer's standard clips, bolts or screws as recommended by furring manufacturer.

D. All galvanized steel members shall have coating conforming to ASTM A 653, G60.

2.3 GYPSUM WALLBOARD TYPES

A. Gypsum Wall Board: 1/2" thick and 5/8" thick as indicated on drawings, "Sheetrock" by USG, or "Gold Bond" by National Gypsum, 48" wide, in maximum lengths available to minimize end-to-end butt joints.

B. Fire Rated Gypsum Wall Board: 1/2" thick and 5/8" thick as indicated on drawings, "Sheetrock Firecode C" by USG, "Firecheck Type C" by Lafarge, or "Gold Bond Fireshield" by National Gypsum, 48" wide, in maximum lengths available to minimize end-to-end butt joints.

C. Moisture/Mold Resistant Gypsum Wall Board (for areas in backbar and workroom: 1/2" thick and 5/8" thick as indicated on drawings, "Mold Tough," "Mold Tough FR," by U.S. Gypsum, "DensArmor Plus" by Georgia Pacific, Lafarge "Mold Defense" and/or Lafarge "Mold Defense Type X," or "Gold Bond EXP Interior Extreme Gypsum Board" by National Gypsum, 48" wide, in maximum lengths available to minimize end-to-end butt joints.

1. Board must have a rating of 10 per ASTM D 3273 with a core that meets ASTM C 1396, Section 6 or ASTM C 1658.

2.4 ACCESSORIES

A. Acoustical Insulation: Paper-less, non-combustible, semi-rigid mineral fiber mat, 2" thick, in walls (unless otherwise indicated), 3 lb./cu. ft. maximum density; Thermafiber LLC "Thermafiber," or approved equal.

B. Fasteners for Wall Board: USG Brand Screws; Type S Bugle Head for fastening wallboard to lighter gauge interior metal framing (up to 20 ga.). Type S-12 Bugle Head for fastening wallboard to heavier gauge interior metal framing (20 ga. to 12 ga.); Type S and Type S-12 Pan Head for attaching metal studs to door frames and runners; and Type G Bugle Head for fastening wallboard to wall board. Lengths specified below under "Part 3 - Execution" Articles and as recommended by drywall manufacturer.

C. Laminating Adhesive: "Sheetrock Brand Joint Compound."

D. Metal Trim


2. Edge Beads: "Sheetrock Brand Paper Faced Metal Bead and Trim."
E. Metal Trim Treatment Materials and Joint Treatment Materials for Gypsum Drywall Boards: Paper tape for joint reinforcing; Setting Type (Durabond 90) or Lightweight Setting Type Joint Compound for taping and topping; and Ready Mix Compound for finishing.

1. For mold-resistant drywall, water resistant drywall, and tile backer board, use glass mesh tape with setting joint compound that is rated 10 when tested in accordance with ASTM D 3273 and evaluated in accordance with ASTM D 3274. Acceptable joint compound is “Rapid Set One Pass” made by CTS Cement Manufacturing Corp. or “Rapid Joint” manufactured by Lafarge North America or approved equal meeting standards noted herein.

F. Control Joints: No. 0.093, USG.


H. Neoprene Gaskets: Conform to ASTM D 1056.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where gypsum board assemblies are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 GENERAL INSTALLATION REQUIREMENTS

A. General

1. Install drywall work in accordance with drywall manufacturer’s printed instructions and as indicated on drawings and specified herein.

2. All metal framing for drywall partitions shall extend from floor to underside of structural deck above. Provide for vertical deflection with positive mechanical connections of framing members to structure.

3. Provide concealed reinforcement, 16 ga. thick by eight (8) inches wide or as detailed or as recommended by manufacturer, for attachment of railings, toilet partitions, and other items to be supported on the partitions which cannot be attached to the metal framing members. Concealed reinforcement shall span between metal studs and be attached thereto using two (2) self-tapping pan head screws at each stud.
a. Back of drywall shall be scored or notched to prevent bulging out
where reinforcement plate occurs.

B. Fire-Rated Assemblies: Install fire-rated assemblies in accordance with
requirements of authorities having jurisdiction, Underwriters' Laboratories and
test results obtained and published by the drywall manufacturer, for the fire-
rated drywall assembly types indicated on the drawings.

C. Acoustical Assemblies: Install acoustically-rated assemblies to achieve a
minimum STC as noted on drawings, in accordance with test results obtained
and published by the drywall manufacturer, for the drywall assembly type
indicated on the drawings.

D. Sealant

1. Install continuous acoustical sealant bead at top and bottom edges of
wallboard where indicated or required for sound rating as wallboard is
installed, and between metal trim edge beads and abutting construction.

2. Install acoustical sealant in 1/8" wide vertical control joints within the length
of the wall or partitions, and in all other joints, specified below under
"Control Joints." Install bead of acoustical sealant around electric switch
and outlet boxes, piping, ducts, and around any other penetration in the
wallboard; place sealant bead between penetrations and edge of
wallboard.

3. Where sealant is exposed to view, protect adjacent surfaces from damage
and from sealant material, and tool sealant flush with and in same plane as
wallboard surface. Sealant beads shall be 1/4" to 3/8" diameter.

E. Wall Board Application

1. Do not install wallboard panels until steel door frames are in place;
coordinate work with Section 081113, "Steel Doors and Frames."

2. See drawings for all board types. Use fire-rated wallboard for fire-rated
assemblies. Use sag-resistant wallboard for ceilings. Use water-resistant
wallboard where indicated on drawings and where wallboard would be
subject to moisture. Install water-resistant wallboard in full, large sheets (no
scrap) to limit number of butt joints.

3. Apply wallboard with long dimension parallel to stud framing members,
and with abutting edges occurring over stud flanges.

4. Install wallboard for partitions from floor to underside of structure above
and secure rigidly in place by screw attachment, unless otherwise
indicated.

5. Provide "Thermafiber" safing insulation meeting standards of Section 078413
at flutes of metal deck where partitions carry up to bottom of metal deck.
6. Neatly cut wallboard to fit around outlets, switch boxes, framed openings, piping, ducts, and other items which penetrate wallboard; fill gaps with acoustic sealant.

7. Where wallboard is to be applied to curved surfaces, dampen wallboard on back side as required to obtain required curve. Finish surface shall present smooth, even curve without fluting or other imperfections.

8. Screw fasten wallboard with power-driven electric screw driver, screw heads to slightly depress surface of wallboard without cutting paper, screws not closer than 3/8" from ends and edges of wallboard.

9. Where studs are doubled-up, screw fasten wallboard to both studs in a staggered pattern.

F. Cementitious Backer Board

1. General: Furnish cementitious backer board in maximum available lengths. Install horizontally, with end joints over framing members.

2. Fastening: Secure cementitious backer board to each framing member with screws spaced not more than 12 inches on center and not closer than 1/2" from the edge. Install screws with a conventional screw gun so that the screw heads are flush with the surface of the board.

3. Joint Treatment: Fill space between edge of backer and receptor with dry-set Portland cement or latex-Portland cement mortar. Fill all horizontal and vertical joints and corners with dry-set Portland cement or latex-Portland cement mortar. Apply fiberglass tape over joints and corners and embed with same mortar.

G. Metal Trim: Install and mechanically secure in accordance with manufacturer's instructions; and finish with three (3) coats of joint compound, feathered and finish sanded smooth with adjacent wallboard surface, in accordance with manufacturer's instructions.

1. Corner Beads: Install specified comer beads in single lengths at all external corners, unless comer lengths exceed standard stock lengths.

2. Edge Beads: Install specified edge beads in single lengths at all terminating edges of wallboard exposed to view, where edges abut dissimilar materials, where edges would be exposed to view, and elsewhere where shown on drawings. Where indicated on drawings, seal joint between metal edge bead and adjoining surface with specified gasket, 1/8" wide minimum and set back 1/8" from face of wallboard, unless other size and profile indicated on drawings.

3. Casing beads shall be set in long lengths, neatly butted at joints. Provide casing beads at juncture of board and vertical surfaces and at exposed perimeters.
H. Control Joint Locations: Gypsum board surfaces shall be isolated with control joints where:

1. Ceiling abuts a structural element, dissimilar wall or other vertical penetration.
2. Construction changes within the plane of the partition or ceiling.
3. Shown on approved shop drawings.
4. Ceiling dimensions exceed thirty (30) feet in either direction.
5. Wings of "L," "U," and "T" shaped ceiling areas are joined.
6. Expansion or control joints occur in the structural elements of the building.
7. Shaftwall runs exceed 30' without interruption.
8. Partition or furring abuts a structural element or dissimilar wall or ceiling.
9. Partition or furring runs exceed 30' without interruption.
10. Where control joints are required, ceiling height door frames may be used as control joints. Less than ceiling height frames shall have control joints extending to the ceiling from both corners.

I. Joint Treatment and Spackling

1. Joints between face wallboards in the same plane, joints at internal corners of intersecting partitions and joints at internal corners of intersections between ceilings and walls or partitions shall be filled with joint compound.
2. Screw heads and other depressions shall be filled with joint compound. Joint compound shall be applied in three (3) coats, feathered and finish surface sanded smooth with adjacent wallboard surface, in accordance with manufacturer’s instructions. Treatment of joints and screw heads with joint compound is also required where wallboard will be covered by finish materials which require a smooth surface, such as vinyl wall coverings.

3.3 FURRED WALLS AND PARTITIONS

A. Use specified metal furring channels. Run metal furring channel framing members vertically, space sixteen (16) inches o.c. maximum. Fasten furring channels to concrete or masonry surfaces with power-driven fasteners or concrete stub nails spaced sixteen (16) inches o.c. maximum through alternate wing flanges (staggered) of furring channel. Furring channels shall be shimmed as necessary to provide a plumb and level backing for wallboard. At inside of exterior walls, an asphalt felt protection strip shall be installed between each furring channel and the wall. Furring channel and splices shall be provided by nesting channels at least eight (8) inches and securely anchoring to concrete or masonry with two (2) fasteners in each wing.
3.4 METAL STUD PARTITIONS

A. Runner Installation: Use channel type. Align accurately at floor according to partition layout. Anchor runners securely sixteen (16) inches o.c. maximum with power-driven anchors to floor slab, with power-driven anchors to structural slab above. See "Stud Installation" below for runners over heads of metal door frames. Where required, carefully remove sprayed-on fireproofing to allow partition to be properly installed.

B. Stud Installation

1. Use channel type, positioned vertically in runners, spaced as noted on drawings, but not more than sixteen (16) inches o.c.

2. Anchor studs to floor runners with screw fasteners. Provide snap-in or slotted hole slip joint bolt connections of studs to ceiling runners leaving space for movement. Anchor studs at partition intersections, partition corners and where partition abuts other construction to floor and ceiling runners with sheet metal screws through each stud flange and runner flange.

3. Connection at ceiling runner for non-rated partitions shall be snap-in or slotted hole slip joint bolt connection that shall allow for movement. Seal studs abutting other construction with 1/8" thick neoprene gasket continuously between stud and abutting construction.

4. Connections for fire rated partitions at ceiling runners shall conform to UL Design #2079.

5. Install metal stud horizontal bracing wherever vertical studs are cut or wallboard is cut for passage of pipes, ducts or other penetrations, and anchor horizontal bracing to vertical studs with sheet metal screws.

6. At jambs of door frames and borrowed light frames, install doubled-up studs (not back to back) from floor to underside of structural deck, and securely anchor studs to jamb anchors of frames and to runners with screws. Provide cross braces from hollow metal frames to underside of slab.

7. Over heads of door frames, install cut-to-length section of runner with flanges slit and web bent to allow flanges to overlap adjacent vertical studs, and securely anchor runner to adjacent vertical studs with sheet metal screws. Install cut-to-length vertical studs from runner (over heads of door frame) to ceiling runner sixteen (16) inches maximum o.c. and at vertical joints of wallboard, and securely anchor studs to runners with sheet metal screws.
8. At control joints, in field of partition, install double-up studs (back to back) from floor to ceiling runner, with 1/4" thick continuous compressible gasket between studs. When necessary, splice studs with eight (8) inches minimum nested laps and attach flanges together with two (2) sheet metal screws in each flange. All screws shall be self-tapping sheet metal screws.

C. Runners and Studs at Chase Wall: As specified above for "Runners" and "Studs" and as specified herein. Chase walls shall have either a single or double row of floor and ceiling runners with metal studs sixteen (16) inches o.c. maximum and positioned vertically in the runners so that the studs are opposite each other in pairs with the flanges pointing in the same direction. Anchor all studs to runner flanges with sheet metal screws through each stud flange and runner flange following requirements of paragraph 3.4, B. Provide cross bracing between the rows of studs by attaching runner channels or studs set full width of chase attached to vertical studs with one self-tapping screw at each end. Space cross bracing not over thirty-six (36) inches o.c. vertically.

D. Wallboard Installation - Single Layer Application (Screw Attached)

1. Install wallboard with long dimension parallel to framing member and with abutting edge joints over web of framing member. Install wallboard with long dimension perpendicular to framing members above and below openings in drywall extending to second stud at each side of opening. Joints on opposite sides of wall shall be arranged so as to occur on different studs.

2. Boards shall be fastened securely to metal studs with screws as specified. Where a free end occurs between studs, back blocking shall be required. Center abutting ends over studs. Correct work as necessary so that faces of boards are flush, smooth, true.

3. Wallboard screws shall be applied with an electric screw gun. Screws shall be driven not less than 3/8" from ends or edges of board to provide uniform dimple not over 1/32" deep. Screws shall be spaced twelve (12) inches o.c. in the field of the board and 8" o.c. staggered along the abutting edges.

4. All ends and edges of wallboard shall occur over screwing members (studs or furring channels). Boards shall be brought into contact but shall not be forced into place. Where ends or edges abut, they shall be staggered. Joints on opposite sides of a partition shall be so arranged as to occur on different studs.

5. At locations where piping receptacles, conduit, switches, etc., penetrate drywall partitions, provide non-drying sealant and an approved sealant stop at cut board locations inside partition.

E. Wallboard Installation - Double-Layer Application

1. General: See drawings for wallboard partition types required.
2. **First Layer (Screw Attached):** Install as described above for single layer application.

3. **Second Layer (Screw Attached):** Screw attach second layer, unless laminating method of attachment indicated on drawings or necessary to obtain required sound rating or fire rating. Install wallboard vertically with vertical joints offset thirty-two (32) inches from first layer joints and staggered on opposite sides of wall. Attach wallboard with 1-5/8" screws sixteen (16) inches o.c. along vertical joints and sixteen (16) inches o.c. in the field of the wallboard. Screw through first layer into metal framing members.

4. **Second Layer (Laminated):** Install wallboard vertically. Stagger joints of second layer from first layer joints. Laminate second layer with specified laminating adhesive in beads or strips running continuously from floor to ceiling in accordance with manufacturer's instructions. After laminating, screw wallboard to framing members with 1-5/8" screws, spaced twelve (12) inches o.c. around perimeter of wallboard.

F. **Wallboard Installation - Laminated Application:** Where laminated wallboard is indicated, use specified laminating adhesive, install wallboard vertically and maintain tolerances as specified for screw attached wallboard.

G. **Insulation Installation:** Install where indicated on drawings. Place blanket tightly between studs.

H. **Deflection of Structure Above:** To allow for possible deflection of structure above partitions, provide top runners for non-rated partitions with 1-1/4" minimum flanges and do not screw studs or drywall to top runner. Where positive anchorage of studs to top runner is required, anchorage device shall be by means of slotted hole (in clip connection with screw attachment to web of steel through bushings located in slots of clips), or other anchorage device approved by Architect.

I. **Control Joints**

1. Leave a 1/2" continuous opening between gypsum boards for insertion of surface mounted joint.

2. Back by double framing members.

3. Attach control joint to face layer with 9/16" galvanized staples six (6) inches o.c. at both flanges along entire length of joint.

4. Provide two (2) inch wide gypsum panel strip or other adequate seal behind control joint in fire rated partitions and partitions with safing insulation.
3.5 **ERECTION AT COLUMN ENCLOSURES**

A. Metal furring supports shall be provided under work of this Section, and shall be cut to lengths as necessary for tight fit such that spacing is not more than sixteen (16) inches o.c.

B. Board shall be fastened securely to supports with screws as specified. Place boards in position with minimum amount of joints. Where free ends occur between supports, back-blocking or furring shall be required. Center abutting ends over supports. Correct work as necessary so that faces of boards are flush, smooth and true. Provide clips or cross furring for attachment as required.

C. All layers shall be screw attached to furring.

D. When column finish called for on drawings to be in the same plane as drywall finish layer, maintain even, level plane.

3.6 **FINISHING**

A. Taping: A thin, uniform layer of compound shall be applied to all joints and angles to be reinforced. Reinforcing tape shall be applied immediately, centered over the joint, seated into the compound. A skim coat shall follow immediately, but shall not function as a fill or second coat. Tape shall be properly folded and embedded in all angles to provide a true angle.

B. Filling: After initial coat of compound has hardened, additional compound shall be applied, filling the board taper flush with the surface. The fill coat shall cover the tape and feather out slightly beyond the tape. On joints with no taper, the fill coat shall cover the tape and feather out at least four (4) inches on either side of the tape. No fill coat is necessary on interior angles.

C. After compound has hardened, a finishing coat of compound shall be spread evenly over and extending slightly beyond the fill coat on all joints and feathered to a smooth, uniform finish. Over tapered edges, the finished joint shall not protrude beyond the plane of the surface. All tapered angles shall receive a finish coat to cover the tape and taping compound, and provide a true angle. Where necessary, sanding shall be done between coats and following the final application of compound to provide a smooth surface, ready for painting.

D. Fastener Depressions: Compound shall be applied to all fastener depressions followed, when hardened by at least two (2) coats of compound, leaving all depressions level with the plane of the surface.

E. Finishing Beads and Trim: Compound shall be applied to all bead and trim and shall be feathered out from the ground to the plane of the surface. When hardened, this shall be followed by two (2) coats of compound each extending slightly beyond the previous coat. The finish coat shall be feathered from the ground to the plane of the surface and sanded as necessary to provide a flat, smooth surface ready for decoration.
F. Level of finish for surface exposed to view shall conform to Level 4 of ASTM C 840 and GA-214 of the Gypsum Association.

1. Skim Coat: For final coat of Level 4 finish, use setting-type, sandable topping compound.

G. Drywall construction with defects of such character which will mar appearance of finished work, or which is otherwise defective, will be rejected and shall be removed and replaced at no expense to the Owner.

3.7 CLEANING AND ADJUSTMENT

A. At the completion of installation of the work, all rubbish shall be removed from the building leaving floors broom clean. Excess material, scaffolding, tools and other equipment shall be removed from the building.

B. Work shall be left in clean condition ready for painting or wall covering. All work shall be as approved by Architect.

C. Cutting and Repairing: Include all cutting, fitting and repairing of the work included herein in connection with all mechanical trades and all other trades which come in conjunction with any part of the work, and leave all work complete and perfect after all trades have completed their work.

3.8 PROTECTION OF WORK

A. Installer shall advise Contractor of required procedures for protecting drywall work from damage and deterioration during remainder of construction period.

END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDED

A. Ceramic tile wall and flooring using thinset application method.

B. Ceramic tile accessories.

1.02 REFERENCES

A. ANSI/TCA A137.1- Specifications for Ceramic Tile.

B. TCA (Tile Council of America)- Handbook for Ceramic Tile Installation.

1.03 SUBMITTALS

A. Submit samples and product data under provisions of General Conditions and Section 01 33 00.

B. Provide product data on specified products, describing physical and performance characteristics, sizes, patterns and colors available.

C. Submit two sample boxes of full line of each material specified in size, illustrating color and pattern.

D. Submit manufacturer's installation instruction under provisions of General Conditions and Section 01 33 00.

E. Submit maintenance data under provisions of Section 01 33 00.

1.04 ENVIRONMENTAL REQUIREMENTS

A. Do not install adhesives in a closed, unventilated environment.

B. Maintain 50 degrees Fahrenheit (10 degrees C) during installation of mortar materials.

1.05 EXTRA MATERIALS

A. Provide 5% extra stock for each tile type.
PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. American Olean, Daltile or Garden State Tile

2.02 TILE FLOORING MATERIALS - (Based on American Olean)

A. Floor: Ceramic Mosaic Tile-Conforming to the following:
   American Olean - Unglazed mosaics

   Moisture Absorption: .1%-5%
   Size: 2” x 2” x ¼” thick
   Edge: Cushion Cut
   Surface Finish: Unglazed, slip-resistant abrasive grain for floor use
   Color: A06 Storm Gray Speckled with 5% scattered accents selected from a full
   range of colors in Group 4.

2.03 TILE ADHESIVE MATERIALS

A. Epoxy Adhesive: Thinset bond type, consisting of epoxy resin, hardener and
   chemical resistant silica filler. Latapoxy 300 Adhesive by Laticrete.

2.04 GROUT MATERIALS

A. Grout: Chemical resistant type, consisting of epoxy resin, hardener and colored
   sand admixture, meeting performance requirements of ANSI A118.3-1999.
   SpectraLOCK PRO by Laticrete.

B. Color Sand Admixture: Color as selected from manufacturer's full line of product.

2.05 MARBLE THRESHOLDS (at all doors from tiled areas)

A. White Honed Italian Marble

B. Grade A, First Quality

C. Free from cracks, chips, stains and defects.

D. Double bevel ¼” each side, overall thickness above finish floor shall not exceed
   ½”.

E. Thickness as required for floor thickness.
PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work and are free of glue, bumps and ridges.

B. Verify that surfaces are smooth and flat with maximum variation of 1/8 inch in 10 ft, and are ready to receive work.

C. Verify existing concrete floors are dry to a maximum moisture content of 7 percent, and exhibit negative alkalinity, carbonization, or dusting.

D. Beginning of installation means acceptance of existing substrate and site conditions.

3.02 PREPARATION

A. Remove sub-floor ridges, bumps, and foreign materials. Fill low spots, cracks, joints, holes, and other defects with subfloor filler.

B. Apply trowel, and float filler to leave a smooth, flat, hard surface.

C. Prohibit traffic from area until filler is cured.

D. Vacuum clean substrate.

E. Apply conditioner to surfaces as recommended by adhesive manufacturer.

3.03 INSTALLATION- thinset method

A. Install adhesive, tile and grout in accordance with manufacturer’s instructions.

B. Place Thresholds under doors to Toilet Rooms.

C. Cut and fit tile tight to penetrations through tile. Form corners and bases neatly.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.

E. Sound tile after setting. Replace hollow sounding units.

F. Allow tile to set for a minimum of 48 hours prior to grouting.

G. Grout tile joints
3.05 PROTECTION

A. Prohibit traffic on floor finish for 48 hours after installation.
B. Provide protective cover over finish installation where there will be construction traffic.

3.06 CLEANING

A. Clean work under provisions of General Conditions.

END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDED

A. Self-leveling floor underlayment topping for existing concrete floors to fill voids and level existing concrete floor prior to receiving specified flooring material.

1.02 RELATED WORK

A. Section 09 30 00 - Tiling

1.03 QUALITY ASSURANCE

A. Installer's Qualifications: Installation of underlayment shall be by an applicator authorized by the manufacturer using approved mixing and pumping equipment.

1.04 DELIVERY, STORAGE AND HANDLING

A. General Requirements: Materials shall be delivered in their original, unopened packages, and protected from exposure to the elements. Damaged or deteriorated materials shall be removed from the premises.

1.05 SITE CONDITIONS

A. Environmental Requirements: Before, during and after installation of underlayment, building interior shall be maintained at a temperature above 40 degrees F (4.4 degrees C) and below 100 degrees F (37.7 degrees C).

1.05 SUBMITTALS

A. Submit samples and product data under provisions of General Conditions and Section 01 33 00.

B. Provide product data on specified products, describing physical and performance characteristics, sizes, patterns and colors available.

C. Submit manufacturer's installation instruction under provisions of General Conditions and Section 01 33 00.

PART 2 PRODUCTS
2.01 Manufacturer: Self-Leveling Poured Floor Underlayment

A. Cementitious power mixed with water to produce a free flowing self leveling underlayment mortar for rapid leveling of interior sub floors. LatiLevel self-leveling floor underlayment as manufactured by Laticrete.

B. Level-Right Plus Cementitious self-leveling floor underlayment as manufactured by Maxxon Corporation.

2.02 Accessories

A. Mix Water: Potable, free from impurities.

B. Concrete Primer: Manufacturer Approved Primer. Admix & Primer by Laticrete.

C. Sealer: Manufacturer Approved Sealer

2.03 MIX DESIGNS

A. General Requirements: mix proportions and methods shall be in strict accordance with product manufacturer recommendations.

PART 3 EXECUTION

3.01 PREPARATION

A. Condition and Cleaning of Concrete: concrete sealed with curing compounds, or slick or smooth substrate surfaces must be shotblast or scarified. Contractor shall clean concrete to remove mud, oil, grease, and other contaminating factors before application of underlayment.

B. Leak Prevention: Fill cracks and voids with a quick setting patching or caulking material where leakage of underlayment could occur.

C. Priming Concrete: Prime concrete using the Manufacturer Approved Primer. Priming instructions vary according to the porosity of the concrete, multiple coats may be necessary.

D. Expansion Joints: Allow joints to continue through the underlayment at the same width.

3.02 APPLICATION OF SELF-LEVELING FLOORING

A. Application: Place underlayment 0 - 1 1/2” (0 - 38 mm). Deeper applications can be done in multiple lifts. Spread and float underlayment to a smooth surface. Place underlayment as continuously as possible until application is complete so that no underlayment slurry is placed against underlayment that has obtained its initial set.
C. Drying: Contractor shall provide continuous ventilation and adequate heat until underlayment is dry. Contractor shall provide mechanical ventilation if necessary.

3.03 PREPARATION FOR INSTALLATION OF GLUE DOWN FLOOR GOODS

A. See underlayment manufacturer guideline for installing finished flooring.

3.04 PROTECTION

A. Protection From Heavy Loads: During construction, place temporary wood planking over Level-Right Plus wherever it will be subject to heavy wheeled or concentrated loads.

END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDED

A. Prefinished polyester glass reinforced plastic sheets and adhered to existing gypsum wallboard with PVC trims.

1.02 RELATED SECTIONS

A. Section 09 30 00 - Tiling.

1.03 REFERENCES

A. American Society for Testing and Materials: Standard Specifications (ASTM)
   1. ASTM D 256 - Izod Impact Strengths (ft #/in)
   2. ASTM D 570 - Water Absorption (%)
   3. ASTM D 638 - Tensile Strengths (psi) & Tensile Modulus (psi)
   4. ASTM D 790 - Flexural Strengths (psi) & Flexural Modulus (psi)
   5. ASTM D 2583 - Barcol Hardness

1.04 SUBMITTALS

A. Product Data: Submit sufficient manufacturer’s data to indicate compliance with these specifications, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

B. Samples for Verification: Submit appropriate section of panel for each finish selected indicating the color, texture, and pattern required.
   1. Submit complete with specified applied finish.
   2. For selected patterns show complete pattern repeat.
   3. Exposed Molding and Trim: Provide samples of each type, finish, and color.

C. Manufacturers Material Safety Data Sheets (MSDS) for adhesives and sealants prior to their delivery to the site.
1.05 **QUALITY ASSURANCE**

A. Conform to building code requirements for interior finish for smoke and flame spread requirements as tested in accordance with:
   1. ASTM E 84 (Method of test for surface burning characteristics of building Materials)
   2. Wall Required Rating – Class A.

1.06 **DELIVERY, STORAGE AND HANDLING**

A. Deliver materials factory packaged on strong pallets.

B. Store panels and trim lying flat, under cover and protected from the elements. Allow panels to acclimate to room temperature (70°) for 48 hours prior to installation.

1.07 **PROJECT CONDITIONS**

A. Environmental Limitations: Building are to be fully enclosed prior to installation with sufficient heat (70°) and ventilation consistent with good working conditions for finish work

B. During installation and for not less than 48 hours before, maintain an ambient temperature and relative humidity within limits required by type of adhesive used and recommendation of adhesive manufacturer.
   1. Provide ventilation to disperse fumes during application of adhesive as recommended by the adhesive manufacturer.

**PART 2 – PRODUCTS**

2.01 **ACCEPTABLE MANUFACTURER**

A. Marlite

B. Glasteel

C. Sequentia

2.02 **PANELS**

A. Fiberglass reinforced thermosetting polyester resin panel sheets complying with ASTM D 5319.
   1. Coating: Multi layer print, primer and finish coats.
   2. Dimensions:
      a. Thickness - 0.090 inch nominal
      b. Width - 4’-0” nominal
      c. Length – 8’-0”
   3. Tolerance:
      a. Length and Width: +/-1/8 inch (3.175mm)
b. Square - Not to exceed 1/8 inch for 8 foot panels.

B. Properties: Resistant to rot, corrosion, staining, denting, peeling, and splintering.
1. Flexural Strength - $1.0 \times 10^4$ psi per ASTM D 790.
2. Flexural Modulus - $3.1 \times 10^5$ psi per ASTM D 790.
3. Tensile Strength - $7.0 \times 10^3$ psi per ASTM D 638.
4. Tensile Modulus - $1.6 \times 10^5$ psi per ASTM D 638.
5. Water Absorption - 0.72% per ASTM D 570.
7. Izod Impact Strength of 72 ft. lbs./in ASTM D 256

C. Back Surface: Smooth. Imperfections which do not affect functional properties are not cause for rejection.

D. Front Finish: Pebbled.

E. Color: Color to be selected from manufacturer's full line of colors.

F. Fire Rating Class A. - Size: 4' x 8'

2.03 MOLDINGS

A. PVC: Extruded PVC Trim Profiles for .090 inch thick panels.
1. M 350 Inside Corner
2. M 360 Outside Corner
3. M 365 Division
4. M 370 Edge
5. Color: match panel

2.02 ACCESSORIES

A. Fasteners: Non-staining nylon drive rivets.
1. Match panel colors.
2. Length to suit project conditions.

C. Adhesive & Sealant: as recommended by manufacturer.

PART 3 - EXECUTION

3.01 PREPARATION

A. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.
1. Verify that stud spacing does not exceed 24 inch on-center.

B. Repair defects prior to installation.
1. Level wall surfaces to panel manufacturer’s requirements. Remove protrusions and fill indentations.

3.02 INSTALLATION

A. Comply with manufacturer’s recommended procedures and installation sequence.

B. Cut sheets to meet supports allowing 1/8” inch clearance for every 8 foot of panel.
   1. Cut and drill with carbide tipped saw blades or drill bits, or cut with shears.
   2. Pre-drill fastener holes 1/8 inch oversize with high speed drill bit.
      a. Space at 8 inches maximum on center at perimeter, approximately 1 inch from panel edge.
      b. Space in field in rows 16 inches on center, with fasteners spaced at 12 inches maximum on center.

C. Apply panels to board substrate, above base, vertically oriented with seams plumb and pattern aligned with adjoining panels.
   1. Install panels with manufacturer’s recommended gap for panel field and corner joints.
      a. Adhesive trowel and application method to conform to adhesive manufacturer’s recommendations.
      b. Drive fasteners for snug fit. Do not over-tighten.

D. Apply panel moldings to all panel edges using silicone sealant providing for required clearances.
   1. All moldings must provide for a minimum 1/8 inch of panel expansion at joints and edges, to insure proper installation.
   2. Apply sealant to all moldings, channels and joints between the system and different materials to assure watertight installation.

3.03 CLEANING

A. Remove excess sealant from panels and moldings. Wipe panel down using a damp cloth and mild soap solution or cleaner.

B. Refer to manufacturer’s specific cleaning recommendations. Do not use abrasive cleaners.

END OF SECTION
PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary General Conditions and Division-1 Specification sections, apply to work of this section.

1.01 WORK INCLUDED

A. Surface preparation.
B. Painting.
C. Surface finish schedule.

1.02 RELATED WORK

A. Section 05 50 00: Metal Fabrications
B. Section 06 10 00: Carpentry
C. Section 08 13 16: Custom Hollow Metal Doors and Frames

1.03 REFERENCES


1.04 DEFINITIONS

A. Conform to ANSI/ASTM D16 for interpretation of terms used in this Section.

1.05 QUALITY ASSURANCE

A. Product Manufacturer: Company specializing in manufacturing quality paint and finish products with five years experience.
B. Applicator: Company specializing in commercial painting and finishing with five years documented experience.

1.06 REGULATORY REQUIREMENTS

A. Conform to code for flame/fuel/smoke rating requirements for finishes.

1.07 SUBMITTALS

A. Submit according to provisions of General Conditions and Section 01 33 00.
B. Submit product data.
C. Provide product data on all finishing products.
D. Submit manufacturer's application instructions.
E. Submit color charts for color selection.

1.08 DELIVERY, STORAGE, AND HANDLING
A. Deliver products to site under provisions of General Conditions and Section 01 33 00.
B. Store and protect products under provisions of General Conditions and Section 01 60 00.
C. Deliver products to site in sealed and labeled containers; inspect to verify acceptance.
D. Container labeling to include manufacturer's name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and reducing.
E. Store paint materials at minimum ambient temperature of 45 degrees Fahrenheit and a maximum of 90 degrees Fahrenheit, in well ventilated area, unless required otherwise by manufacturer's instructions.
F. Take precautionary measures to prevent fire hazards and spontaneous combustion.

1.09 ENVIRONMENTAL REQUIREMENTS
A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperature above 45 degrees Fahrenheit for 24 hours before, during, and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.
B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent, unless required otherwise by manufacturer's instructions.
C. Minimum Application Temperatures for Latex Paints: 45 degrees Fahrenheit for interiors; 50 degrees Fahrenheit for exterior; unless required otherwise by manufacturer's instructions.
D. Minimum Application Temperature for Varnish Finishes: 65 degrees Fahrenheit for interior or exterior, unless required otherwise by manufacturer's instructions.
E. Provide lighting level of 80-ft candles measured mid-height at substrate surface.
F. Protection:
1. Cover or otherwise protect finish work of other trades and surfaces not being painted concurrently or not to be painted.

1.10 EXTRA STOCK

A. Provide a one gallon container of each color of each type finish paint to Contracting Officer. Do not provide extra stock of primers.

B. Label each container with color and room locations, in addition to the manufacturer's label.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

A. Except as otherwise specified, materials shall be the products of the following manufacturer:

1. Sherwin Williams
2. Benjamin Moore Co.
3. Pittsburg Paints

B. Materials selected for coating systems for each type surface shall be the products of a single manufacturer.

2.02 MATERIALS

A. Products specified are as manufactured by Benjamin Moore, unless otherwise indicated.

B. Coating: Ready mixed, except field-catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.

C. Coatings: Good flow and brushing properties; capable of drying or curing free of streaks and sags.

D. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

2.03 FINISHES

A. Refer to end of Section for surface finish schedule.
PART 3 - EXECUTION

3.01  INSPECTION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Beginning of installation means acceptance of substrate.

3.02  PREPARATION

A. Remove electrical plates, hardware, light fixture trim, and fittings prior to preparing surfaces or finishing.

B. Correct minor defects and clean surfaces which affect work of this Section.

C. Shellac and seal marks which may bleed through surface finishes.

D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

E. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

F. Uncoated Steel and Iron Surfaces: Remove grease, scale, dirt, and rust. Where heavy coatings of scale are evident, remove by wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.


H. Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

I. Set and fill all nail holes. Sand to achieve a smooth surface.

3.03  PROTECTION

A. Protect elements surrounding the work of this Section from damage or disfiguration.
B. Repair damage to other surfaces caused by work of this Section.

C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.

D. Remove empty paint containers from site.

3.04 APPLICATION

A. Apply products in accordance with manufacturer's instructions.

B. Do not apply finishes to surfaces that are not dry.

C. Apply each coat to uniform finish.

D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.

E. Sand lightly between coats to achieve required finish.

F. Allow applied coat to dry before next coat is applied.

G. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

3.06 CLEANING

A. As work proceeds, promptly remove paint where spilled-splashed or spattered.

B. During progress of work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials, and debris.

C. Collect cotton waste, clothes, and material, which may constitute a fire hazard, place in closed metal containers and remove daily from site.

3.07 PAINT SCHEDULE

A. **Exterior Ferrous and Non-Ferrous Metal:** Power Coating.
   - **Prep:** Cleaning, Rinsing, Phosphating, Drying
   - **Finish:** Interpon D2000 AAMA 2604 Power coating.

B. **Interior Ferrous and Non-Ferrous Metal:** Power Coating.
   - **Prep:** Cleaning, Rinsing, Phosphating, Drying
   - **Finish:** Interpon D2000 AAMA 2604 Power coating.
C. **Interior Concrete Block & Brick:**
   - **Primer: (1-coat)**
     - Benjamin Moore M88 Latex Block Filler
   - **Finish: (2-coats)**
     - Benjamin Moore 333 Regal Aquaglo Semi-Gloss Enamel

D. **Interior Galvanized Metal:**
   - **Primer: (1-coat)**
     - Benjamin Moore M04 Acrylic Metal Primer
   - **Finish: (2-coats)**
     - Benjamin Moore 133 Impervo Alkyd High Gloss Enamel

E. **Interior Wood Surfaces:**
   - **Primer: (1-coat)**
     - Benjamin Moore 253 Super Spec Enamel Undercoat & Primer Sealer.
   - **Finish: (2-coats)**
     - Benjamin Moore 333 Regal Aquaglo Semi-Gloss Enamel

F. **Interior Walls and Ceilings; Plaster and Gypsum Wall Board**
   - **Primer: (1-coat)**
     - Benjamin Moore 253 Super Spec Enamel Undercoat & Primer Sealer.
   - **Finish: (2-coats)**
     - Benjamin Moore 223 Eco Spec Acrylic Eggshell Enamel

G. **Interior Wood Surfaces: Scheduled to receive natural finish.**
   - **Finish: (3-coats)**
     - Benjamin Moore 435 Benwood Polyurethane Low-Lustre Finish

### 3.08 COLORS

A. Architect will select colors from manufacturers full range.
B. Up to eight new colors for finished surfaces will be selected.
C. See drawings for specific colors.

END OF SECTION