Project Manual For:

NCDOT DIV 10 OFFICE SECURITY UPGRADES

716 West Main St, Albemarle, NC 28001

SCO ID # *16-15785-01A*

BID SET

Construction Documents
August 26, 2016
Project Number **16020**

Six Coliseum Centre
2815 Coliseum Centre, Suite 500
Charlotte, North Carolina 28217

704 379 1919 tel
704 379 1920 fax

adwarchitects.com

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716 WEST MAIN STREET ALBEMARLE, NC 28001
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END OF SECTION 00 01 10

ADVERTISEMENT FOR BIDS

Sealed proposals will be received until the scheduled opening at **2:00pm**, local time on **April 5th, 2017** at the **Division 10 Office, 716 West Main Street Albemarle, NC 28001**, in the Division Conference room, for the construction of the **NCDOT Division 10 Office Security Upgrades (SCO# 16-15785-01A)**, at which time and place bids will be opened and read.

An open Pre-bid meeting will be held for all interested bidders at **2:00pm**, local time on **March 22nd, 2017** at the **Division 10 Office, 716 West Main Street Albemarle, NC 28001**, in the **Division Conference room**. The meeting will address project specific questions, issues, bidding procedures, bid forms, and site access during bidding. Attendance at this meeting is mandatory for prime General Contractors interested in bidding.

Complete plans, specifications and contract documents will be open for inspection in the offices of ADW Architects, 2815 Coliseum Centre Drive, Suite 500 Charlotte, North Carolina 28217, 704-379-1919, mreeder@adwarchitects.com; during normal business hours beginning **March 8th, 2017**, and in the plan rooms of the iSqFt (previously Associated General Contractors) http://www.isqft.com/start/, Dodge http://construction.com/, CMD Group (formerly Reed Construction Data) http://www.cmdgroup.com, in Minority Plan Rooms of Hispanic Contractors Association of the Carolinas (HCAC) in Winston-Salem, Charlotte and Raleigh Areas – 877-227-1680, and on the NCDOT Division 10 letting website https://connect.ncdot.gov/letting/Pages/Letting-List.aspx?let_type=10&let_status=Advertised

The State reserves the unqualified right to reject any and all proposals.

Signed,

Timothy Kirk
Division 10 Staff Engineer, NCDOT
2327 Tipton Drive
Charlotte, NC 28001
Ph: 704.244.1216

N O T I C E T O B I D D E R S

Sealed proposals will be received by the **State of North Carolina through the North Carolina Department of Transportation, General Services Division**, at the **Division 10 Office** in the Division Conference Room, at mailing address **716 West Main Street Albemarle, NC 28001**, up to 2:00 pm on **April 5th, 2017** and immediately thereafter publicly opened and read for the furnishing of labor, material and equipment entering into the construction of

NCDOT Division 10 Office Security Upgrades
SCO *#16-15785-01A*

This project involves the alteration of an existing reception area and security upgrades to the Division 10 Office building.

Bids will be received *for Single Prime General Construction.* All proposals shall be lump sum.

Pre-Bid Meeting

An open Pre-bid meeting will be held for all interested bidders at 2:00pm, local time on March 22nd, 2017 at the Division 10 Office, 716 West Main Street Albemarle, NC 28001, in the Division Conference room. The meeting will address project specific questions, issues, bidding procedures, bid forms, and site access during bidding. Attendance at this meeting is mandatory for prime General Contractors interested in bidding.

Complete plans, specifications and contract documents will be open for inspection in the offices of ADW Architects, 2815 Coliseum Centre Drive, Suite 500 Charlotte, North Carolina 28217, 704-379-1919, mreeder@adwarchitects.com; during normal business hours beginning March 8th, 2017, and in the plan rooms of the iSqFt (previously Associated General Contractors) http://www.isqft.com/start/, Dodge http://construction.com/, CMD Group (formerly Reed Construction Data) http://www.cmdgroup.com, in Minority Plan Rooms of Hispanic Contractors Association of the Carolinas (HCAC) in Winston-Salem, Charlotte and Raleigh Areas – 877-227-1680, and on the NCDOT Division 10 letting website https://connect.ncdot.gov/letting/Pages/Letting-List.aspx?let_type=10&let_status=Advertised

NOTE: The bidder shall include with the bid proposal the form *Identification of Minority Business Participation* identifying the minority business participation it will use on the project and shall include either *Affidavit **A*** or *Affidavit **B*** as applicable. Forms and instructions are included within the Proposal Form in the bid documents. Failure to complete these forms is grounds for rejection of the bid. (GS143-128.2c Effective 1/1/2002.)

All contractors are hereby notified that they must have proper license as required under the state laws governing their respective trades.

General contractors are notified that Chapter 87, Article 1, General Statutes of North Carolina, will be observed in receiving and awarding general contracts. General contractors submitting bids on this project must have license classification for *Building Contractor.*

A performance bond and a payment bond will be required for one hundred percent (100%) of the contract price.

Payment will be made based on ninety-five percent (95%) of monthly estimates and final payment made upon completion and acceptance of work.

No bid may be withdrawn after the scheduled closing time for the receipt of bids for a period of 90 days.

The owner reserves the right to reject any or all bids and to waive informalities.

Designer:

Robert Cosimo Woodruff, AIA, CDT
ADW Architects, PA
2815 Coliseum Centre Drive
Charlotte, NC 28217
704.379.1919

Owner:

Tim Kirk
Staff Engineer
NCDOT Division of Highways, Division 10
2327 Tipton Drive
Charlotte, North Carolina 28206
704.244.1216

STATE OF NORTH CAROLINA
STANDARD FORM OF INFORMAL CONTRACT AND GENERAL CONDITIONS

FOR

NCDOT DIV 10 SECURITY UPGRADES
716 WEST MAIN STREET
ALBEMARLE, NC 28001
SCO ID # 16-15785-01A

SCOPE OF WORK

This project involves the alteration of reception area and security upgrades, located at 716 West Main Street Albemarle, NC 28001. The existing building is a single story office building.

NOTICE TO BIDDERS

Sealed bid for this work will be received by:

Rob Woodruff AIA, CDT
ADW Architects, p.a.
716 West Main Street
Albemarle, NC 28001

up to **2:00 PM**, on **April 5th, 2017** and immediately thereafter publicly opened and read aloud. Complete plans and specification and contract documents can be obtained from

Melanie Reeder
ADW Architects
2815 Coliseum Centre Drive, Suite 500
Charlotte, North Carolina 28217
704-379-1919

Contractors are hereby notified that they must have proper license under the State laws governing their respective trades and that North Carolina General Statute 87 will be observed in receiving and awarding contracts. General Contractors must have general license classification for **Building Contractor**.

No bid may be withdrawn after the opening of bids for a period of 90 days. The Owner reserves the right to reject any or all bids and waive informalities. Bids shall be made only on the BID/ACEPTANCE form provided herein with all blank spaces for bids properly filled in and all signatures properly executed.

Please note on the envelope – **Bid: Attn: Rob Woodruff AIA, CDT**

NCDOT DIV 10– BID
(Bid Date)
(Contractor)
(License Number)

Mailed bids must be submitted in a sealed envelope within the shipping envelope and must be received prior to the scheduled bid opening time. Address as follows:

NCDOT DIV 10 – BID
716 West Main Street
Albemarle, NC 28001
ATTN: ADW Architects – Rob Woodruff

An open Pre-bid meeting will be held for all interested bidders on at **2:00pm**, local time on **March 22nd**, **2017** at the Division 10 Office located at **716 WEST MAIN STREET ALBEMARLE, NC 28001** The meeting will address project specific questions, issues, bidding procedures, bid forms, and site access during bidding. Attendance at this meeting is mandatory for prime General Contractors interested in bidding.

BID/ACCEPTANCE FORM

for

NCDOT DIV 10 SECURITY UPGRADES

716 WEST MAIN STREET

ALBEMARLE, NC 28001

SCO ID # 16-15785-01A

This project involves the alteration of NCDOT DIV 10 716 West Main Street Albemarle, NC 28001. The existing building is a single story. The facility was originally constructed and is currently used as office space for the Department of Transportation.

Bidder must acknowledge receipt of any issued addenda if applicable.

We are in receipt of Addendum _____1_____2 _____3 _____4

The undersigned, as bidder, proposes and agrees if this bid is accepted to contract with the State of North Carolina through the *North Carolina Department of Transportation (NCDOT)* for the furnishing of all materials, equipment, and labor necessary to complete the construction of the work described in these documents in full and complete accordance with plans, specifications, and contract documents, and to the full and entire satisfaction of the State of North Carolina and the NCDOT & ADW Architects, PA for the sum of:

BASE BID: Dollars $

Alternate #	Add/ Deduct	Alternate bid price	Accepted (*OWNER INITIALS ON EACH LINE INDICATES ACCEPTANCE OF ALTERNATE*)
1 – *N/A*			
2 – *N/A*			
3 – *N/A*			
4 – *N/A*			

UNIT PRICES

Not Applicable.

Respectively submitted this _____day of_____20____

_____

(Contractor's Name)

Federal ID#:_____ By:_____

Witness:_____ Title:_____
(Owner, partner, corp. Pres. Or Vice President)

_____ Address:_____
(Proprietorship or Partnership)

Attest: *(corporation)* Email Address:_____

(***Corporate Seal***)

By:_____ License #:_____

Title:_____ Date:_____
(Corporation, Secretary./Ass't Secretary.)

ACCEPTED by the STATE OF NORTH CAROLINA

through the

Total amount of accepted by the owner, included base bid and bid alternates:_____

_____
(Agency/Institution)

BY:_____TITLE:_____

DATE:_____

G E N E R A L C O N D I T I O N S

1. GENERAL

It is understood and agreed that by submitting a bid that the Contractor has examined these contract documents, drawings and specifications and has visited the site of the Work, and has satisfied himself relative to the Work to be performed.

2. DEFINITIONS

Owner: "Owner" shall mean, The State of North Carolina through North Carolina Department of Transportation (NCDOT)

Contractor: "Contractor" shall mean the entity that will provide the services for the Owner.

Designer: The **designer(s)** are those referred to within this contract, or their authorized representatives. The Designer(s), as referred to herein, shall mean architect and/or engineer responsible for preparing the project plans and specifications. They will be referred to hereinafter as if each were of the singular number, masculine gender.

Contract Documents: "Contract Documents" shall consist of the Notice to Bidders; General Conditions of the Contract; special conditions if applicable; Supplementary General Conditions; the drawing and specifications, including all bulletins, addenda or other modifications of the drawings and specifications incorporated into the documents prior to their execution; the bid; the contract; the performance bond if applicable; and insurance certificates. All of these items together form the contract.

INTENT AND EXECUTION OF DOCUMENTS

The drawings and specifications are complementary, one to the other. That which is shown on the drawings or called for in the specifications shall be as binding as if it were both called for and shown. The intent of the drawings and specifications is to establish the scope of all labor, materials, transportation, equipment, and any and all other things necessary to provide a complete job. In case of discrepancy or disagreement in the Contract Documents, the order of precedence shall be: Form of Contract, specifications, large-scale detail drawings, small-scale drawings.

In such cases where the nature of the work requires clarification by the Designer/ Owner, the Designer/ Owner shall furnish such clarification. Clarifications and drawings shall be consistent with the intent of the Contract Documents, and shall become a part thereof.

4. AS-BUILT MARKED-UP CONSTRUCTION DOCUMENTS

Contractor shall provide one complete set of legible "as-built" marked-up construction drawings and specifications recording any and all changes made to the original design during the course of construction. In the event no changes occurred, submit construction drawings and specifications set with notation "No Changes." The Designer/Owner must receive "As-built" marked-up construction drawings and specifications before the final pay request can be processed.

5. SUBMITTAL DATA

The Contractor awarded the contract shall submit all specified submittals to the Owner/Designer. A minimum number of copies as specified by the owner, of all required submittal data pertaining to construction, performance and general dimensional criteria of the components listed in the technical specifications shall be submitted. No material or equipment shall be ordered or installed prior to written approval of the submittals by the Designer/Owner. Failure to provide submittal data for review on equipment listed in the technical specifications will result in removal of equipment by the Contractor at his expense if the equipment is not in compliance with the specifications.

6. SUBSTITUTIONS

In accordance with the provisions of G.S. 133-3, material, product, or equipment substitutions proposed by the bidders to those specified herein can only be considered during the bidding phase until five (5) days prior to the receipt of bids or by the date specified in the pre bid conference, when submitted to the Designer with sufficient data to confirm material, product, or equipment equality. Proposed substitutions submitted after this time will be considered only as potential change order.

Submittals for proposed substitutions shall include the following information:

a. Name, address, and telephone number of manufacturer and supplier as appropriate.

b. Trade name, model or catalog designation.

c. Product data including performance and test data, reference standards, and technical descriptions of material, product, or equipment. Include color samples and samples of available finishes as appropriate.

d. Detailed comparison with specified products including performance capabilities, warranties, and test results.

e. Other pertinent data including data requested by the Designer to confirm product equality.

If a proposed material, product, or equipment substitution is deemed equal by the Designer to those specified, all bidders of record will be notified by Addendum.

7. WORKING DRAWINGS AND SPECIFICATIONS AT THE JOB SITE

The contractor shall maintain, in readable condition at his job site one complete set of working drawings and specifications for his work including all shop drawings. Such drawings and specifications shall be available for use by the owner, designer or his authorized representative.

The contractor shall maintain at the job site, a day-to-day record of work-in-place that is at variance with the contract documents. Such variations shall be fully noted on project drawings by the contractor and submitted to the designer upon project completion and no later than 30 days after acceptance of the project.

8. MATERIALS, EQUIPMENT, EMPLOYEES

a. The contractor shall, unless otherwise specified, supply and pay for all labor, transportation, materials, tools, apparatus, lights, power, fuel, heat, sanitary facilities, water, scaffolding and incidentals necessary for the completion of his work, and shall install, maintain and remove all equipment of the construction, other utensils or things, and be responsible for the safe, proper and lawful construction, maintenance and use of same, and shall construct in the best and most workmanlike manner, a complete job and everything incidental thereto, as shown on the plans, stated in the specifications, or reasonably implied therefrom, all in accordance with the contract documents.

b. All materials shall be new and of quality specified, except where reclaimed material is authorized herein and approved for use. Workmanship shall at all times be of a grade accepted as the best practice of the particular trade involved, and as stipulated in written standards of recognized organizations or institutes of the respective trades except as exceeded or qualified by the specifications.

c. Upon notice, the contractor shall furnish evidence as to quality of materials.

d. Products are generally specified by ASTM or other reference standard and/or by manufacturer's name and model number or trade name. When specified only by reference standard, the Contractor may select any product meeting this standard, by any manufacturer. When several products or manufacturers are specified as being equally acceptable, the Contractor has the option of using any product and manufacturer combination listed. However, the contractor shall be aware that the cited examples are used only to denote the quality standard of product desired and that they do not restrict bidders to a specific brand, make, manufacturer or specific name; that they are used only to set forth

and convey to bidders the general style, type, character and quality of product desired; and that equivalent products will be acceptable. Request for substitution of materials, items, or equipment shall be submitted to the designer for approval or disapproval; the designer prior to the opening of bids shall make such approval or disapproval. Alternate materials may be requested after the award if it can clearly be demonstrated that it is an added benefit to the owner and the designer and owner approves.

e. The designer is the judge of equality for proposed substitution of products, materials or equipment.

f. If at any time during the construction and completion of the work covered by these contract documents, the language, conduct, or attire of any workman of the various crafts be adjudged a nuisance to the owner or designer, or if any workman be considered detrimental to the work, the contractor shall order such parties removed immediately from grounds.

g. The Contractor shall cooperate with the designer and the owner in coordinating construction activities.

h. The Contractor shall maintain qualified personnel and effective supervision at the site at all times during the project, and exercise the appropriate quality control program to ensure compliance with the project drawings and specifications. The designer is responsible for determining compliance with the drawings and specifications.

9. CODES, PERMITS AND INSPECTIONS

The Contractor shall obtain the required permits, if required, give all notices, and comply with all laws, ordinances, codes, rules and regulations bearing on the conduct of the work under this contract. If the Contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the Designer in writing. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, codes, rules and regulations, and without such notice to the Owner, he shall bear all cost arising there from.

All work under this contract shall conform to the current North Carolina Building Code and other state and national codes as are applicable.

Projects constructed by the State of North Carolina or by any agency or institution of the State are not subject to county or municipal building codes and may* not be subject to inspection by county or municipal authorities. Where appropriate, the Contractor shall, cooperate with the county or municipal authorities by obtaining building permits. The contractor at no cost may obtain permits to the owner.

All fire alarm work shall be in accordance with the latest State Construction Office (SCO) *Guidelines for Fire Alarm Installation* (NFPA72). Where the contract documents are in conflict with the SCO guidelines, the SCO guidelines shall govern. The Contractor shall be responsible for all the costs for the correction of the work where he installs it in conflict with the latest edition of the SCO *Guidelines for Fire Alarm Installation*..

*****Inspection and certification of compliance by local authorities is necessary if an architect or engineer was <u>not</u> employed on the project, or if the plans and specifications were not approved and the construction inspected by the State Construction Office.

10. PROTECTION OF WORK, PROPERTY, THE PUBLIC AND SAFETY

a. The contractors shall be jointly responsible for the entire site and the building or construction of the same and provide all the necessary protections, as required by the owner or designer, and by laws or ordinances governing such conditions. They shall be responsible for any damage to the owner's property or of that of others on the job, by them, their personnel, or their subcontractors, and shall make good such damages. They shall be responsible for and pay for any damages caused to the owner. All contractors shall have access to the project at all times, except as indicated in the Supplemental General Conditions.

b. The contractor shall provide cover and protect all portions of the structure when the work is not in progress, provide and set all temporary roofs, covers for doorways, sash and windows, and all other

materials necessary to protect all the work on the building, whether set by him, or any of the subcontractors. Any work damaged through the lack of proper protection or from any other cause, shall be repaired or replaced without extra cost to the owner.

c. No fires of any kind will be allowed inside or around the operations during the course of construction without special permission from the designer and owner.

d. The contractor shall protect all trees and shrubs designated to remain in the vicinity of the operations by building substantial boxes around it. He shall barricade all walks, roads, etc., as directed by the designer to keep the public away from the construction. All trenches, excavations or other hazards in the vicinity of the work shall be well barricaded and properly lighted at night.

e. The contractor shall provide all necessary safety measures for the protection of all persons on the job, including the requirements of the A.G.C. *Accident Prevention Manual in Construction*, as amended, and shall fully comply with all state laws or regulations and North Carolina State Building Code requirements to prevent accident or injury to persons on or about the location of the work. He shall clearly mark or post signs warning of hazards existing, and shall barricade excavations, elevator shafts, stairwells and similar hazards. He shall protect against damage or injury resulting from falling materials and he shall maintain all protective devices and signs throughout the progress of the work.

f. The contractor shall adhere to the rules, regulations and interpretations of the North Carolina Department of Labor relating to Occupational Safety and Health Standards for the Construction Industry (Title 29, Code of Federal Regulations, Part 1926, published in Volume 39, Number 122, Part II, June 24, 1974, *Federal Register*), and revisions thereto as adopted by General Statutes of North Carolina 95-126 through 155.

i. In the event of emergency affecting the safety of life, the protection of work, or the safety of adjoining properties, the contractor is hereby authorized to act at his own discretion, without further authorization from anyone, to prevent such threatened injury or damage. Any compensation claimed by the contractor on account of such action shall be determined as provided for under Article 13(b).

j. Any and all costs associated with correcting damage caused to adjacent properties of the construction site or staging area shall be borne by the contractor. These costs shall include but not be limited to flooding, mud, sand, stone, debris, and discharging of waste products.

11. SUBCONTRACTS AND SUBCONTRACTORS

The Contractor is and remains fully responsible for his own acts or omissions as well as those of any subcontractor or of any employee of either. The Contractor agrees that no contractual relationship exists between the subcontractor and the Owner in regard to the contract, and that the subcontractor acts on this work as an agent or employee of the Contractor.

12. CONTRACTOR-SUBCONTRACTOR RELATIONSHIPS

The Contractor agrees that the terms of these Contract Documents shall apply equally to each Subcontractor as to the Contractor, and the Contractor agrees to take such action as may be necessary to bind each Subcontractor to these terms. The Contractor further agrees to conform to the Code of Ethical Conduct as adopted by the Associated General Contractors of America, Inc., with respect to Contractor-Subcontractor relationships. The Owner reserves the right to limit the amount of portions of work to be subcontracted as hereinafter specified.

13. CHANGES IN THE WORK AND CLAIMS FOR EXTRA COST

a. The owner may have changes made in the work covered by the contract. These changes will not invalidate and will not relieve or release the contractor from any guarantee given by him pertinent to the contract provisions. These changes will not affect the validity of the guarantee bond and will not relieve the surety or sureties of said bond. All extra work shall be executed under conditions of the original contract.

b. Except in an emergency endangering life or property, no change shall be made by the contractor except upon receipt of approved change order from the designer, countersigned by the owner

authorizing such change. No claim for adjustments of the contract price shall be valid unless this procedure is followed. Should a claim for extra compensation by the contractor be denied by the designer or the owner, the contractor may pursue his claim in accordance with G.S. 143-135.3.

In the event of emergency endangering life or property, the contractor may be directed to proceed on a time and material basis whereupon the contractor shall proceed and keep accurately on such form as specified by the designer or owner, a correct account of costs together with all proper invoices, payrolls and supporting data. Upon completion of the work the change order will be prepared as outlined under either Method "c(1)" or Method "c(2)" or both.

c. In determining the values of changes, either additive or deductive, contractors are restricted to the use of the following methods:

1. Where the extra work involved is covered by unit prices quoted in the proposal, or subsequently agreed to by the Contractor, Designer, Owner and State Construction Office the value of the change shall be computed by application of unit prices based on quantities, estimated or actual as agreed of the items involved, except is such cases where a quantity exceeds the estimated quantity allowance in the contract by one hundred percent (100%) or more. In such cases, either party may elect to proceed under subparagraph c (2) herein. If neither party elects to proceed under c (2), then unit prices shall apply.

2. The contracting parties shall negotiate and agree upon the equitable value of the change prior to issuance of the change order, and the change order shall stipulate the corresponding lump sum adjustment to the contract price.

d. Under Paragraph “b” and Methods "c(2)" above, the allowances for overhead and profit combined shall be as follows: all contractors (the single contracting entity (prime), his subcontractors(1st tier subs), or their sub-subcontractors (2nd tier subs, 3rd tier subs, etc.) shall be allowed a maximum of 10% on work they each self-perform; the prime contractor shall be allowed a maximum of 5% on contracted work of his 1st tier sub; 1st tier, 2nd tier, 3rd tier, etc. contractors shall be allowed a maximum of 2.5% on the contracted work of their subs. ; Under Method "c(1)", no additional allowances shall be made for overhead and profit. In the case of deductible change orders, under Method "c(2)" and Paragraph (b) above, the contractor shall include no less than five percent (5%) profit, but no allowances for overhead.

e. The term "net cost" as used herein shall mean the difference between all proper cost additions and deductions. The "cost" as used herein shall be limited to the following:

1. The actual costs of materials and supplies incorporated or consumed as part of the work;

2. The actual costs of labor expended on the project site; labor expended in coordination, change order negotiation, record document maintenance, shop drawing revision or other tasks necessary to the administration of the project are considered overhead whether they take place in an office or on the project site.

3. The actual costs of labor burden, limited to the costs of social security (FICA) and Medicare/Medicaid taxes; unemployment insurance costs; health/dental/vision insurance premiums; paid employee leave for holidays, vacation, sick leave, and/or petty leave, not to exceed a total of 30 days per year; retirement contributions; worker’s compensation insurance premiums; and the costs of general liability insurance when premiums are computed based on payroll amounts; the total of which shall not exceed thirty percent (30%) of the actual costs of labor;

4. The actual costs of rental for tools, excluding hand tools; equipment; machinery; and temporary facilities required for the work;

5. The actual costs of premiums for bonds, insurance, permit fees and sales or use taxes related to the work.

Overtime and extra pay for holidays and weekends may be a cost item only to the extent approved by the owner.

f. Should concealed conditions be encountered in the performance of the work below grade, or should concealed or unknown conditions in an existing structure be at variance with the conditions indicated by the contract documents, the contract sum and time for completion may be equitably adjusted by change order upon claim by either party made within thirty (30) days after the condition has been identified. The cost of such change shall be arrived at by one of the foregoing methods. All change orders shall be supported by a unit cost breakdown showing method of arriving at net cost as defined above.

g. Change orders shall be submitted by the contractor in writing to the owner/designer for review and approval. The contractor will provide such proposal and supporting data in suitable format. The designer shall verify correctness. Delay in the processing of the change order due to lack of proper submittal by the contractor of all required supporting data shall not constitute grounds for a time extension or basis of a claim. Within fourteen (14) days after receipt of the contractor's accepted proposal including all supporting documentation required by the designer, the designer shall prepare the change order and forward to the contractor for his signature or otherwise respond, in writing, to the contractor's proposal. Within seven (7) days after receipt of the change order executed by the contractor, the designer shall, certify the change order by his signature, and forward the change order and all supporting data to the owner for the owner's signature. The owner shall execute the change order, within seven (7) days of receipt.

At the time of signing a change order, the contractor shall be required to certify as follows:

"I certify that my bonding company will be notified forthwith that my contract has been changed by the amount of this change order, and that a copy of the approved change order will be mailed upon receipt by me to my surety."

h. A change order, when issued, shall be full compensation, or credit, for the work included, omitted or substituted. It shall show on its face the adjustment in time for completion of the project as a result of the change in the work.

i. If, during the progress of the work, the owner requests a change order and the contractor's terms are unacceptable, the owner, may require the contractor to perform such work on a time and material basis whereupon the contractor shall proceed and keep accurately on such form as specified by the Designer or owner, a correct account of cost together with all proper invoices, payrolls and supporting data. Upon completion of the work a change order will be prepared with allowances for overhead and profit per paragraph d. above and "net cost" and "cost" per paragraph e. above. Without prejudice, nothing in this paragraph shall preclude the owner from performing or to have performed that portion of the work requested in the change order.

14. ANNULMENT OF CONTRACT

If the contractor fails to begin the work under the contract within the time specified, or the progress of the work is not maintained on schedule, or the work is not completed within the time specified, or fails to perform the work with sufficient workmen and equipment or with sufficient materials to ensure the prompt completion of said work, or shall perform the work unsuitably or shall discontinue the prosecution of the work, or if the contractor shall become insolvent or be declared bankrupt or commit any act of bankruptcy or insolvency, or allow any final judgment to stand against him unsatisfied for a period of forty-eight (48) hours, or shall make an assignment for the benefit of creditors, or for any other cause whatsoever shall not carry on the work in an acceptable manner, the owner may give notice in writing, sent by certified mail, return receipt requested, to the contractor and his surety (if applicable) of such delay, neglect or default, specifying the same, and if the contractor within a period of seven (7) days after such notice shall not proceed in accordance therewith, then the owner shall, declare this contract in default, and, thereupon, the surety shall promptly take over the work and complete the performance of this contract in the manner and within the time frame specified. In the event the contractor, or the surety (if applicable) shall fail to take over the work to be done under this contract within seven (7) days after being so notified and notify the owner in writing, sent by certified mail, return receipt requested, that he is taking the same over and stating that he will diligently pursue and complete the same, the owner shall have full power and authority, without violating the contract, to take the prosecution of the work out of the hands of said contractor, to appropriate or use any or all

contract materials and equipment on the grounds as may be suitable and acceptable and may enter into an agreement, either by public letting or negotiation, for the completion of said contract according to the terms and provisions thereof or use such other methods as in his opinion shall be required for the completion of said contract in an acceptable manner. All costs and charges incurred by the owner, together with the costs of completing the work under contract, shall be deducted from any monies due or which may become due said contractor and surety (if applicable). In case the expense so incurred by the owner shall be less than the sum which would have been payable under the contract, if it had been completed by said contractor, then the said contractor and surety (if applicable) shall be entitled to receive the difference, but in case such expense shall exceed the sum which would have been payable under the contract, then the contractor and the surety (if applicable) shall be liable and shall pay to the owner the amount of said excess.

15. TERMINATION FOR CONVENIENCE

a. Owner may at any time and for any reason terminate Contractor's services and work at Owner's convenience, after notification to the contractor in writing via certified mail. Upon receipt of such notice, Contractor shall, unless the notice directs otherwise, immediately discontinue the work and placing of orders for materials, facilities and supplies in connection with the performance of this Agreement.

b. Upon such termination, Contractor shall be entitled to payment only as follows: (1) the actual cost of the work completed in conformity with this Agreement; plus, (2) such other costs actually incurred by Contractor as approved by Owner; (3) plus ten percent (10%) of the cost of the balance of the work to be completed for overhead and profit. There shall be deducted from such sums as provided in this subparagraph the amount of any payments made to Contractor prior to the date of the termination of this Agreement. Contractor shall not be entitled to any claim or claim of lien against Owner for any additional compensation or damages in the event of such termination and payment.

16. OWNER'S RIGHT TO DO WORK

If, during the progress of the work or during the period of guarantee, the contractor fails to prosecute the work properly or to perform any provision of the contract, the owner, after seven (7) days' written notice sent by certified mail, return receipt requested, to the contractor from the designer, may perform or have performed that portion of the work. The cost of the work may be deducted from any amounts due or to become due to the contractor, such action and cost of same having been first approved by the designer. Should the cost of such action of the owner exceed the amount due or to become due the contractor, then the contractor or his surety, or both, shall be liable for and shall pay to the owner the amount of said excess.

17. REQUESTS FOR PAYMENT

Contractor shall refer to the Supplemental General Conditions for specific directions on payment schedule, procedures and the name and address where to send applications for payments for this project. It is imperative that invoices be sent only to the above address in order to assure proper and timely delivery and handling.

The Designer/Owner will process all Contractor pay requests as the project progresses. The Contractor shall receive payment within thirty (30) consecutive days after Designer/Owner's approval of each pay request. Payment will only be made for work performed as determined by the Designer/Owner.

Retainage:

a. Retainage withheld will not exceed 5% at any time.
b. The same terms apply to general contractor and subcontractors alike.
c. Following 50% completion of the project no further retainage will be withheld if the contractor/subcontractor has performed their work satisfactorily.
d. Exceptions:
    1. Owner/Contractor can reinstate retainage if the contractor/subcontractor does not continue to perform satisfactorily.

2. Following 50% completion of the project, the owner is authorized to withhold additional retainage from a subsequent periodic payment if the amount of retainage withheld falls below 2.5%.

Final payment will be made within forty-five (45) consecutive days after acceptance of the work, receipt of marked-up “as-built” drawings and specifications and the submission both of notarized Contractor's affidavit and final pay request. All pay requests shall be submitted to the Designer/Owner for approval.

THE CONTRACTOR'S FINAL PAYMENT AFFIDAVIT SHALL STATE: "THIS IS TO CERTIFY THAT ALL COSTS OF MATERIALS, EQUIPMENT, LABOR, SUBCONTRACTED WORK, AND ALL ELSE ENTERING INTO THE ACCOMPLISHMENT OF THIS CONTRACT, INCLUDING PAYROLLS, HAVE BEEN PAID IN FULL."

18. PAYMENTS WITHHELD

The designer with the approval of the Owner may withhold payment for the following reasons:

a. Faulty work not corrected.

b. The unpaid balance on the contract is insufficient to complete the work in the judgment of the designer.

c. To provide for sufficient contract balance to cover liquidated damages that will be assessed.

d. The secretary of the Department of Administration may authorize the withholding of payment for the following reasons:

i. Claims filed against the contractor or evidence that a claim will be filed.

ii. Evidence that subcontractors have not been paid.

When grounds for withholding payments have been removed, payment will be released. Delay of payment due the contractor without cause will make owner liable for payment of interest to the contractor as provided in G.S. 143-134.**1.** As provided in G.S. 143-134.1(e), the owner shall not be liable for interest on payments withheld by the owner for unsatisfactory job progress, defective construction not remedied, disputed work, or third-party claims filed against the owner or reasonable evidence that a third-party claim will be filed.

19. MINIMUM INSURANCE REQUIREMENTS

The work under this contract shall not commence until the contractor has obtained all required insurance and verifying certificates of insurance have been approved in writing by the owner. These certificates shall document that coverages afforded under the policies will not be cancelled, reduced in amount or coverages eliminated until at least thirty (30) days after mailing written notice, by certified mail, return receipt requested, to the insured and the owner of such alteration or cancellation. If endorsements are needed to comply with the notification or other requirements of this article copies of the endorsements shall be submitted with the certificates.

a. **Worker’s Compensation and Employer's Liability**

The contractor shall provide and maintain, until final acceptance, workmen's compensation insurance, as required by law, as well as employer's liability coverage with minimum limits of $100,000.

b. **Public Liability and Property Damage**

The contractor shall provide and maintain, until final acceptance, comprehensive general liability insurance, including coverage for premises operations, independent contractors, completed operations, products and contractual exposures, as shall protect such contractors from claims arising out of any bodily injury, including accidental death, as well as from claims for property

damages which may arise from operations under this contract, whether such operations be by the contractor or by any subcontractor, or by anyone directly or indirectly employed by either of them and the minimum limits of such insurance shall be as follows:

Bodily Injury:	$500,000 per occurrence
Property Damage:	$100,000 per occurrence / $300,000 aggregate

In lieu of limits listed above, a $500,000 combined single limit shall satisfy both conditions.

Such coverage for completed operations must be maintained for at least two (2) years following final acceptance of the work performed under the contract.

c. **Property Insurance (Builder's Risk/Installation Floater)**

The contractor shall purchase and maintain property insurance until final acceptance, upon the entire work at the site to the full insurable value thereof. This insurance shall include the interests of the owner, the contractor, the subcontractors and sub-subcontractors in the work and shall insure against the perils of fire, wind, rain, flood, extended coverage, and vandalism and malicious mischief. If the owner is damaged by failure of the contractor to purchase or maintain such insurance, then the contractor shall bear all reasonable costs properly attributable thereto; the contractor shall effect and maintain similar property insurance on portions of the work stored off the site when request for payment per articles so includes such portions.

d. **Deductible**

Any deductible, if applicable to loss covered by insurance provided, is to be borne by the contractor.

e. **Other Insurance**

The contractor shall obtain such additional insurance as may be required by the owner or by the General Statutes of North Carolina including motor vehicle insurance, in amounts not less than the statutory limits.

f. **Proof of Carriage**

The contractor shall furnish the owner with satisfactory proof of carriage of the insurance required before written approval is granted by the owner.

20. ASSIGNMENT

No assignment of the Contractor's obligations or the Contractor's right to receive payment hereunder shall be permitted. However, upon written request approved by the Owner and solely as a convenience to the Contractor, the Owner may: (1) forward the Contractor's payment check directly to any person or entity designated by the Contractor, and (2) include any person or entity designated by Contractor as a joint payee on the Contractor's payment check. In no event shall such approval and action obligate the Owner to anyone other than the Contractor, and the Contractor shall remain responsible for fulfillment of all contract obligations.

21. CLEANING UP AND RESTORATION OF SITE

The Contractor shall keep the sites and surrounding area reasonably free from rubbish at all times and shall remove debris from the site from time to time or when directed to do so by the Owner. Before final inspection and acceptance of the project, the Contractor shall thoroughly clean the sites, and completely prepare the project and site for use by the Owner.

At the end of construction, the contractor shall oversee and implement the restoration of the construction site to its original state. Restoration includes but not limited to walks, drives, lawns, trees and shrubs, corridors, stairs and other elements shall be repaired, cleaned or otherwise restored to their original state.

22. GUARANTEE

The contractor shall unconditionally guarantee materials and workmanship against patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve (12) months following the final acceptance of the work and shall replace such defective materials or workmanship without cost to the owner.

Where items of equipment or material carry a manufacturer's warranty for any period in excess of twelve (12) months, then the manufacturer's warranty shall apply for that particular piece of equipment or material. The contractor shall replace such defective equipment or materials, without cost to the owner, within the manufacturer's warranty period.

Additionally, the owner may bring an action for latent defects caused by the negligence of the contractor, which is hidden or not readily apparent to the owner at the time of beneficial occupancy or final acceptance, whichever occurred first, in accordance with applicable law.

Guarantees for roofing workmanship and materials shall be stipulated in the specifications sections governing such roof, equipment, materials, or supplies.

23. STANDARDS

All manufactured items and/or fabricated assemblies subject to operation under pressure, operation by connection to an electric source, or operation involving a connection to a manufactured, natural, or LP gas source shall be constructed and approved in a manner acceptable to the appropriate State inspector which customarily requires the label or re-examination listing or identification marking of appropriate safety standard organization, such as the American Society of Mechanical Engineers for pressure vessels; the Underwriters Laboratories and/or National Electrical Manufacturers Association for electrically operated assemblies; or the American Gas Association for gas operated assemblies, where such approvals of listings have been established for the type of device offered and furnished. Further, all items furnished shall meet all requirements of the Occupational Safety and Health Act (OSHA), and State and federal requirements relating to clean air and water pollution.

All equipment and products must be independent third party tested and labeled (UL, FM, or CTS) before final connections to Owner services or utilities.

24. TAXES

a. Federal excise taxes do not apply to materials entering into state work (Internal Revenue Code, Section 3442(3)).

b. Federal transportation taxes do not apply to materials entering into state work (Internal Revenue Code, Section 3475(b) as amended).

c. North Carolina sales tax and use tax, as required by law, do apply to materials entering into state work and such costs shall be included in the bid proposal and contract sum.

d. Local option sales and use taxes, as required by law, do apply to materials entering into state work as applicable and such costs shall be included in the bid proposal and contract sum.

e. **Accounting Procedures for Refund of County Sales & Use Tax**

Amount of county sales and use tax paid per contractor's statements:

Contractors performing contracts for state agencies shall give the state agency for whose project the property was purchased a signed statement containing the information listed in G.S. 105-164.14(e).

The Department of Revenue has agreed that in lieu of obtaining copies of sales receipts from contractors, an agency may obtain a certified statement as of April 1, 1991 from the contractor setting forth the date, the type of property and the cost of the property purchased from each vendor, the county in which the vendor made the sale and the amount of local sales and use taxes paid thereon. If the property was purchased out-of-state, the county in which the property was

delivered should be listed. The contractor should also be notified that the certified statement may be subject to audit.

In the event the contractors make several purchases from the same vendor, such certified statement must indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices, the counties, and the county sales and use taxes paid thereon.

Name of taxing county: The position of a sale is the retailer's place of business located within a taxing county where the vendor becomes contractually obligated to make the sale. Therefore, it is important that the county tax be reported for the county of sale rather than the county of use.

When property is purchased from out-of-state vendors and the county tax is charged, the county should be identified where delivery is made when reporting the county tax.

Such statement must also include the cost of any tangible personal property withdrawn from the contractor's warehouse stock and the amount of county sales or use tax paid thereon by the contractor.

Similar certified statements by his subcontractors must be obtained by the general contractor and furnished to the claimant.

Contractors are not to include any tax paid on supplies, tools and equipment which they use to perform their contracts and should include only those building materials, supplies, fixtures and equipment which actually become a part of or annexed to the building or structure.

25. EQUAL OPPORTUNITY CLAUSE

The non-discrimination clause contained in Section 202 (Federal) Executive Order 11246, as amended by Executive Order 11375, relative to equal employment opportunity for all persons without regard to race, color, religion, sex or national origin, and the implementing rules and regulations prescribed by the secretary of Labor, are incorporated herein.

The contractor(s) agree not to discriminate against any employee or applicant for employment because of physical or mental disabilities in regard to any position for which the employee or applicant is qualified. The contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals with such disabilities without discrimination based upon their physical or mental disability in all employment practices.

26. MINORITY BUSINESS PARTICIPATION

GS 143-128.2 establishes a ten percent (10%) goal for participation by minority business in total value of work for each State building project.

For construction contracts with a value of less than $300,000, the Owner has the responsibility to make a good faith effort to solicit minority bids and to attain the goal. The contractor shall include with his bid a completed Identification of HUB Certified/Minority Business Participation form. Contractor shall submit completed Appendix E MBE Documentation for Contract Payments form with final payment request.

For construction contracts with a value of $300,000 or greater, the contractor shall comply with the document *Guidelines for* Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts including Identification of Minority Business Participation, Affidavits A, B, C, and D, and Appendix E. These forms provided herein are hereby incorporated and made a part of this contract.

27. ACCESS TO PERSONS AND RECORDS

The State Auditor shall have access to persons and records as a result of all contracts or grants entered into by the Owner in accordance with General Statute 147-64.7. The Owner's internal auditors shall also have the right to access and copy the Contractor's records relating to the Contract and Project during the term of the Contract and within two years following the completion of the Project/close-out of the Contract to verify accounts, accuracy, information, calculations and/or data affecting and/or relating to Contractor's requests for payment, requests for

change orders, change orders, claims for extra work, requests for time extensions and related claims for delay/extended general conditions costs, claims for lost productivity, claims for lost efficiency, claims for idle equipment or labor, claims for price/cost escalation, pass-through claims of subcontractors and/or suppliers, and/or any other type of claim for payment or damages from Owner and/or its project representatives.

28. GOVERNING LAWS

This contract is made under and shall be governed by and construed in accordance with the laws of the State of North Carolina. The Contractor shall comply with all applicable federal, State and local laws, statutes, ordinances and regulations including, but not limited to, the Omnibus Transportation Act of 1991 and its implementing regulations.

29. CONTRACTOR EVALUATION

The contractor's overall work performance on the project shall be fairly evaluated in accordance with the State Building Commission policy and procedures, for determining qualifications to bid on future State projects. In addition to final evaluation, an interim evaluation may be prepared during the progress of project. The owner may request the contractor's comments to evaluate the designer.

SUPPLEMENTARY GENERAL CONDITIONS

TIME OF COMPLETION

The Contractor shall commence work to be performed under this Contract on a date to be specified in written order from the Designer/Owner and shall fully complete all work hereunder within ninety (90) consecutive calendar days from the Notice to Proceed. For each day in excess of the above number of days, the Contractor shall pay the Owner the amount of Five Hundred Dollars ($ 500.00) as liquidated damages reasonably estimated in advance to cover the losses to be incurred by the Owner should the Contractor fail to complete the Work within the time specified.

If the Contractor is delayed at any time in the progress of his work by any act or negligence of the Owner, his employees or his separate contractor, by changes ordered in the work; by abnormal weather conditions; by any causes beyond the Contractor's control or by other causes deemed justifiable by Owner, then the contract time may be reasonably extended in a written order from the Owner upon written request from the contractor within ten days following the cause for delay. Time extensions for weather delays, acts of God, labor disputes, fire, delays in transportation, unavoidable casualties or other delays which are beyond the control of the Owner do not entitle the Contractor to compensable damages for delays. Any contractor claim for compensable damages for delays is limited to delays caused solely by the owner or its agents.

PAYMENTS

Contractor to submit payment applications formatted to the AIA Document G702. No partial payment will be made unless agreed to in advance. Final payment will be made lump sum within forty-five (45) consecutive days after acceptance of the work and the submission both of notarized contractor's affidavit and four copies of invoices which are to include the contract, account and job order numbers.

The contractor's affidavit shall state: "This is to certify that all costs of materials, equipment, labor, and all else entering into the accomplishment of this contract, including payrolls, have been paid in full."
Executed contract documents, insurance certifications and, upon completion and acceptance of the work, invoices and other information requested are to be sent to:

Timothy Kirk
Division 10 Staff Engineer, NCDOT
2327 Tipton Drive
Charlotte, NC 28001
Ph: 704.983.4400

It is imperative that contract documents, invoices, etc., be sent only to the above address in order to assure proper and timely delivery and handling.

UTILITIES

The Owner shall provide necessary and adequate facilities for water, electricity, gas, oil, sewer, and other utility services, which may be necessary and required for completion of the project. The Contractor shall provide and maintain temporary toilets at his own expense as necessary for the use of all construction personnel. They shall be located and built in accordance with state, county and local ordinances and shall be maintained in a sanitary condition. Limited parking will be provided on the site for Contractor use.

ALTERNATE BIDS

There are no alternate bids required for this project.

UNIT PRICES

There are no unit prices requested for this project.

NO SMOKING POLICY

Smoking is not permissible on the project premises during or after working hours.

FIRE ALARM WORK

Contractor for fire alarms shall be approved by Design and Construction Services Department prior to beginning work.

PERFORMANCE AND PAYMENT BONDS

Contractor shall furnish a Performance Bond and Payment Bond executed by a surety company authorized to do business in North Carolina. The bonds shall be in the full contract amount. Bonds shall be executed in the form bound with these specifications (Forms 307 & 308). An authorized agent of the bonding company who is licensed to do business in North Carolina shall countersign all bonds.

OWNER ACCEPTANCE

All references in the contract documents to “Substantial Completion” shall be replaced by “Final Acceptance”. Refer to Article 22 of the General Conditions.

GUIDELINES FOR RECRUITMENT AND SELECTION OF MINORITY BUSINESSES FOR PARTICIPATION IN STATE CONSTRUCTION CONTRACTS

In accordance with G.S. 143-128.2 (effective January 1, 2002) these guidelines establish goals for minority participation in single-prime bidding, separate-prime bidding, construction manager at risk, and alternative contracting methods, on State construction projects in the amount of $300,000 or more. The legislation provides that the State shall have a verifiable ten percent (10%) goal for participation by minority businesses in the total value of work for each project for which a contract or contracts are awarded. These requirements are published to accomplish that end.

SECTION A: INTENT

It is the intent of these guidelines that the State of North Carolina, as awarding authority for construction projects, and the contractors and subcontractors performing the construction contracts awarded shall cooperate and in good faith do all things legal, proper and reasonable to achieve the statutory goal of ten percent (10%) for participation by minority businesses in each construction project as mandated by GS 143-128.2. Nothing in these guidelines shall be construed to require contractors or awarding authorities to award contracts or subcontracts to or to make purchases of materials or equipment from minority-business contractors or minority-business subcontractors who do not submit the lowest responsible, responsive bid or bids.

SECTION B: DEFINITIONS

1. Minority - a person who is a citizen or lawful permanent resident of the United States and who is:
   a. Black, that is, a person having origins in any of the black racial groups in Africa;
   b. Hispanic, that is, a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Caribbean Islands, regardless of race;
   c. Asian American, that is, a person having origins in any of the original peoples of the Far East, Southeast Asia and Asia, the Indian subcontinent, the Pacific Islands;
   d. American Indian, that is, a person having origins in any of the original peoples of North America; or
   e. Female

2. Minority Business - means a business:
   a. In which at least fifty-one percent (51%) is owned by one or more minority persons, or in the case of a corporation, in which at least fifty-one percent (51%) of the stock is owned by one or more minority persons or socially and economically disadvantaged individuals; and
   b. Of which the management and daily business operations are controlled by one or more of the minority persons or socially and economically disadvantaged individuals who own it.

3. Socially and economically disadvantaged individual - means the same as defined in 15 U.S.C. 637. "Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as a member of a group without regard to their individual qualities". "Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged".

4. Public Entity - means State and all public subdivisions and local governmental units.

5. Owner - The State of North Carolina, through the Agency/Institution named in the contract.

6. Designer – Any person, firm, partnership, or corporation, which has contracted with the State of North Carolina to perform architectural or engineering, work.

7. Bidder - Any person, firm, partnership, corporation, association, or joint venture seeking to be awarded a public contract or subcontract.

8. Contract - A mutually binding legal relationship or any modification thereof obligating the seller to furnish equipment, materials or services, including construction, and obligating the buyer to pay for them.

9. Contractor - Any person, firm, partnership, corporation, association, or joint venture which has contracted with the State of North Carolina to perform construction work or repair.

10. Subcontractor - A firm under contract with the prime contractor or construction manager at risk for supplying materials or labor and materials and/or installation. The subcontractor may or may not provide materials in his subcontract.

SECTION C: RESPONSIBILITIES

1. Office for Historically Underutilized Businesses, Department of Administration (hereinafter referred to as HUB Office).

   The HUB Office has established a program, which allows interested persons or businesses qualifying as a minority business under G.S. 143-128.2, to obtain certification in the State of North Carolina procurement system. The information provided by the minority businesses will be used by the HUB Office to:
   a. Identify those areas of work for which there are minority businesses, as requested.
   b. Make available to interested parties a list of prospective minority business contractors and subcontractors.
   c. Assist in the determination of technical assistance needed by minority business contractors.

   In addition to being responsible for the certification/verification of minority businesses that want to participate in the State construction program, the HUB Office will:
   (1) Maintain a current list of minority businesses. The list shall include the areas of work in which each minority business is interested.
   (2) Inform minority businesses on how to identify and obtain contracting and subcontracting opportunities through the State Construction Office and other public entities.
   (3) Inform minority businesses of the contracting and subcontracting process for public construction building projects.
   (4) Work with the North Carolina trade and professional organizations to improve the ability of minority businesses to compete in the State construction projects.
   (5) The HUB Office also oversees the minority business program by:
      a. Monitoring compliance with the program requirements.
      b. Assisting in the implementation of training and technical assistance programs.
      c. Identifying and implementing outreach efforts to increase the utilization of minority businesses.
      d. Reporting the results of minority business utilization to the Secretary of the Department of Administration, the Governor, and the General Assembly.

2. State Construction Office
   The State Construction Office will be responsible for the following:

   a. Furnish to the HUB Office a minimum of twenty-one days prior to the bid opening the following:
      (1) Project description and location;
      (2) Locations where bidding documents may be reviewed;
      (3) Name of a representative of the owner who can be contacted during the advertising period to advise who the prospective bidders are;
      (4) Date, time and location of the bid opening.
      (5) Date, time and location of prebid conference, if scheduled.

   b. Attending scheduled prebid conference, if necessary, to clarify requirements of the general statutes regarding minority-business participation, including the bidders' responsibilities.

c. Reviewing the apparent low bidders' statutory compliance with the requirements listed in the proposal, that must be complied with, if the bid is to be considered as responsive, prior to award of contracts. The State reserves the right to reject any or all bids and to waive informalities.
d. Reviewing of minority business requirements at Preconstruction conference**.**
e. Monitoring of contractors' compliance with minority business requirements in the contract documents during construction.
f. Provide statistical data and required reports to the HUB Office.
g. Resolve any protest and disputes arising after implementation of the plan, in conjunction with the HUB Office.

3. Owner
Before awarding a contract, owner shall do the following:

a. Develop and implement a minority business participation outreach plan to identify minority businesses that can perform public building projects and to implement outreach efforts to encourage minority business participation in these projects to include education, recruitment, and interaction between minority businesses and non-minority businesses.
b. Attend the scheduled prebid conference.
c. At least 10 days prior to the scheduled day of bid opening, notify minority businesses that have requested notices from the public entity for public construction or repair work and minority businesses that otherwise indicated to the Office for Historically Underutilized Businesses an interest in the type of work being bid or the potential contracting opportunities listed in the proposal. The notification shall include the following:
    1. A description of the work for which the bid is being solicited.
    2. The date, time, and location where bids are to be submitted.
    3. The name of the individual within the owner's organization who will be available to answer questions about the project.
    4. Where bid documents may be reviewed.
    5. Any special requirements that may exist.
d. Utilize other media, as appropriate, likely to inform potential minority businesses of the bid being sought.
e. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
f. Review, jointly with the designer, all requirements of G.S. 143-128.2(c) and G.S. 143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with corresponding total dollar value of the bid and affidavit listing good faith efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award to the State Construction Office.
g. Evaluate documentation to determine good faith effort has been achieved for minority business utilization prior to recommendation of award to State Construction Office.
h. Review prime contractors' pay applications for compliance with minority business utilization commitments prior to payment**.**
i. Make documentation showing evidence of implementation of Owner's responsibilities available for review by State Construction Office and HUB Office, upon request

4. Designer
Under the single-prime bidding, separate prime bidding, construction manager at risk, or alternative contracting method, the designer will:

a. Attend the scheduled prebid conference to explain minority business requirements to the prospective bidders.
b. Assist the owner to identify and notify prospective minority business prime and subcontractors of potential contracting opportunities.
c. Maintain documentation of any contacts, correspondence, or conversation with minority business firms made in an attempt to meet the goals.
d. Review jointly with the owner, all requirements of G.S. 143-128.2(c) and G.S.143-128.2(f) – (i.e. bidders' proposals for identification of the minority businesses that will be utilized with

corresponding total dollar value of the bid and affidavit listing Good Faith Efforts, or affidavit of self-performance of work, if the contractor will perform work under contract by its own workforce) - prior to recommendation of award.

e. During construction phase of the project, review "MBE Documentation for Contract Payment" – (Appendix E) for compliance with minority business utilization commitments. Submit Appendix E form with monthly pay applications to the owner and forward copies to the State Construction Office.
f. Make documentation showing evidence of implementation of Designer's responsibilities available for review by State Construction Office and HUB Office, upon request.

5. Prime Contractor(s), CM at Risk, and Its First-Tier Subcontractors
Under the single-prime bidding, the separate-prime biding, construction manager at risk and alternative contracting methods, contractor(s) will:

a. Attend the scheduled prebid conference.
b. Identify or determine those work areas of a subcontract where minority businesses may have an interest in performing subcontract work.
c. At least ten (10) days prior to the scheduled day of bid opening, notify minority businesses of potential subcontracting opportunities listed in the proposal. The notification will include the following:
   (1) A description of the work for which the subbid is being solicited.
   (2) The date, time and location where subbids are to be submitted.
   (3) The name of the individual within the company who will be available to answer questions about the project.
   (4) Where bid documents may be reviewed.
   (5) Any special requirements that may exist, such as insurance, licenses, bonds and financial arrangements.

   If there are more than three (3) minority businesses in the general locality of the project who offer similar contracting or subcontracting services in the specific trade, the contractor(s) shall notify three (3), but may contact more, if the contractor(s) so desires.
d. During the bidding process, comply with the contractor(s) requirements listed in the proposal for minority participation.
e. Identify on the bid**,** the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit listing good faith efforts as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).
f. Make documentation showing evidence of implementation of PM, CM-at-Risk and First-Tier Subcontractor responsibilities available for review by State Construction Office and HUB Office, upon request.
g. Upon being named the apparent low bidder, the Bidder shall provide one of the following: (1) an affidavit (Affidavit C) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal; (2) if the percentage is not equal to the applicable goal, then documentation of all good faith efforts taken to meet the goal. Failure to comply with these requirements is grounds for rejection of the bid and award to the next lowest responsible and responsive bidder.
h. The contractor(s) shall identify the name(s) of minority business subcontractor(s) and corresponding dollar amount of work on the schedule of values. The schedule of values shall be provided as required in Article 31 of the General Conditions of the Contract to facilitate payments to the subcontractors.
i. The contractor(s) shall submit with each monthly pay request(s) and final payment(s), "MBE Documentation for Contract Payment" – (Appendix E), for designer's review.
j. During the construction of a project, at any time**,** if it becomes necessary to replace a minority business subcontractor, immediately advise the owner, State Construction Office, and the Director of the HUB Office in writing**,** of the circumstances involved. The prime contractor shall make a good faith effort to replace a minority business subcontractor with another minority business subcontractor.

k. If during the construction of a project additional subcontracting opportunities become available, make a good faith effort to solicit subbids from minority businesses.
l. It is the intent of these requirements apply to all contractors performing as prime contractor and first tier subcontractor under construction manager at risk on state projects.

6. Minority Business Responsibilities
While minority businesses are not required to become certified in order to participate in the State construction projects, it is recommended that they become certified and should take advantage of the appropriate technical assistance that is made available. In addition, minority businesses who are contacted by owners or bidders must respond promptly whether or not they wish to submit a bid.

SECTION 4: DISPUTE PROCEDURES
It is the policy of this state that disputes that involves a person's rights, duties or privileges, should be settled through informal procedures. To that end, minority business disputes arising under these guidelines should be resolved as governed under G.S. 143-128(g).

SECTION 5: These guidelines shall apply upon promulgation on state construction projects. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: www.nc-sco.com

SECTION 6: In addition to these guidelines, there will be issued with each construction bid package provisions for contractual compliance providing minority business participation in the state construction program.

MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)

APPLICATION:

The **Guidelines for Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts** are hereby made a part of these contract documents. These guidelines shall apply to all contractors regardless of ownership. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: http://www.nc-sco.com

MINORITY BUSINESS SUBCONTRACT GOALS:

The goals for participation by minority firms as subcontractors on this project have been set at 10%.

The bidder must identify on its bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit (Affidavit A) listing good faith efforts **or** affidavit (Affidavit B) of self-performance of work, if the bidder will perform work under contract by its own workforce, as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).

The lowest responsible, responsive bidder must provide Affidavit C, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal.

OR

Provide Affidavit D, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, **with documentation of Good Faith Effort, if the percentage is not equal to the applicable goal.**

OR

Provide Affidavit B, which includes sufficient information for the State to determine that the bidder does not customarily subcontract work on this type project.

The above information must be provided as required. Failure to submit these documents is grounds for rejection of the bid.

MINIMUM COMPLIANCE REQUIREMENTS:

All written statements, affidavits or intentions made by the Bidder shall become a part of the agreement between the Contractor and the State for performance of this contract. Failure to comply with any of these statements, affidavits or intentions, or with the minority business Guidelines shall constitute a breach of the contract. A finding by the State that any information submitted either prior to award of the contract or during the performance of the contract is inaccurate, false or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the State whether to terminate the contract for breach.

In determining whether a contractor has made Good Faith Efforts, the State will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts. Good Faith Efforts include:

(1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed.

(2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due.

(3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation.

(4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.

(5) Attending any prebid meetings scheduled by the public owner.

(6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.

(7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.

(8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.

(9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.

(10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

APPENDIX E

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application #: _____ Period: _____

The following is a list of payments made to Minority Business Enterprises on this project for the above-mentioned period.

MBE FIRM NAME	* INDICATE TYPE OF MBE	AMOUNT PAID THIS MONTH	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Social and Economically Disadvantage (D)

Date: _____ Approved/Certified By: _____
Name

_____
Title

_____
Signature

SUBMIT WITH EACH PAY REQUEST & FINAL PAYMENT

(Revised on 3/14/2003)

Division 01 - General Requirements

SECTION 01 10 00 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: NCDOT DIV 10 OFFICE SECURITY UPGRADES at 716 WEST MAIN STREET ALBEMARLE, NC 28001.
   1. Owner: State of North Carolina through the North Carolina Department of Transportation, General Services.

B. Architect Identification: The Contract Documents, date indicated on the Contract Documents, were prepared for Project by ADW Architects: 2815 Coliseum Centre drive, Suite 500 Charlotte, North Carolina 28217. Phone: (704) 379-1919. The Project Architect is Jim Powell. The Project Manager is Rob Woodruff. The Construction Contract Administrator is Tim Cohen.

C. Project Coordinator: Timothy M. Kirk, Division Staff Engineer has been appointed by Owner to serve as Project Coordinator.

D. This project involves the alteration of an existing reception area and security upgrades at the NCDOT DIVISION 10 Office located at 716 West Main Street, Albemarle, NC 28001.

1.3 CONTRACT[**S**]

A. Project will be constructed under an **informal (single-prime)** construction contract.

1.4 WORK SEQUENCE

A. The Work shall be conducted in the following sequences unless construction phases otherwise specified.
   1. Construct Work in phases to accommodate the Owner's use; if applicable, of the premises during the construction period; coordinate the construction schedule and operations with the Owner.
   2. Some of the work will take place within and adjacent to portions of the building that will remain operational by NCDOT. Such work must first be coordinated and scheduled with the Owner's assigned project manager.

1.5 USE OF PREMISES

A. Owner Occupancy
   1. Owner will occupy other areas of the premises during the entire period of construction to conduct his normal operations. Cooperate with Owner in all construction operations to minimize conflict, and to facilitate Owner usage.

2. Contractor shall at all times conduct his operations as to insure the least inconvenience and the greatest amount of safety and security for the Owner, his staff, and the general public.

1.6 PROTECTION REQUIREMENTS FOR NEW AND EXISTING CONSTRUCTION

A. Protect the existing building from wind, storms, cold heat, water and dust damage of any sort. Provide all equipment and enclosures to maintain this protection and keep the building interior free of water and dust during the life of the Contract.

B. Provide all shoring and bracing required to maintain the integrity and the safety of the existing structure and for the proper execution of the Work.

C. Exercise the utmost care to protect all existing utility lines from damage during the progress of the Work.

D. Provide and erect before any work begins, and maintain during the progress of the Work, all necessary fences, warning signals, signs and lights. Extent of this work and details of construction shall be in accordance with the requirements of all state and local codes.

E. Any portion of the existing building or existing utility services not included as part of this Contract or any portion of the Work damaged because of failure to provide the protection required shall be removed and replaced with new materials and construction at the Contractor's expense. This work shall be accomplished subject to the Architect's and Owners' approval.

1.7 REPLACEMENT AND REPAIR OF ANY STRUCTURES THAT HAVE BEEN DESTROYED IN THE PROGRESS OF THE WORK:

A. Because of the installation of the new items of equipment, fixtures, materials, etc., that are required by this Project, it shall become necessary to remove portions of the existing structure, equipment, and/or utility services. Unless specifically noted otherwise on the Drawings, the Contractor shall be responsible for replacing, in a condition of identical appearance, construction, design, working order, and strength as its previous state, any such portion of the existing structure, equipment, and/or utility services so required to be disturbed. The replaced item shall meet the approval of the Architect before final approval of the Project is given.

1.8 PRODUCTS ORDERED IN ADVANCE (Not Used)

1.9 OWNER-FURNISHED PRODUCTS (Not Used)

1.10 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 49-division format and CSI/CSC's "MasterFormat" numbering system.
   1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
   1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
   2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
      a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 10 00

SECTION 01 14 00 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 USE OF PREMISES

A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.
   1. Limits: Confine constructions operations to the renovations area which is the limits shown on the contract documents
   2. Owner Occupancy: Allow for Owner occupancy of site and use by the public.
   3. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
      a. Schedule deliveries to minimize use of driveways and entrances.
      b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Use of Existing Building: Maintain existing building in a weather tight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

1.2 OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy site and other areas of the existing building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 14 00

SECTION 01 25 00 - PRODUCT SUBSTITUTIONS-PRIOR TO BID

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling requests for substitutions prior to the Owner's receipt of bids.

B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Division 01 Section "Submittal Procedures".

C. Standards: Refer to Division 01 Section "References" for applicability of industry standards to products specified.

D. Procedural requirements governing the Contractor's selection of products and product options are included under Division 01 Section "Product Requirements".

1.3 DEFINITIONS

A. Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.

B. Substitutions: Requests for changes in products, materials, and equipment, of construction required by Contract Documents proposed by the Contractor are considered requests for "substitutions". The following are not considered substitutions:

1. Substitutions that are requested by Bidders beyond the 10 days prior to bid opening submittal period.
2. Revisions to Contract Documents requested by the Owner or Architect.
3. Specified options of products and construction methods included in Contract Documents.
4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

A. Substitution Request Submittal: Requests for substitution from prime bidders will be considered if received by the architect ten (10) days prior to the bid opening.

1. Submit three (3) copies of each request for substitution for consideration. Submit requests in the form and in accordance with procedures required below.
2. Identify the product or the fabrication or installation method to be replaced in each request. Include related specification sections and drawing number.

3. Provide complete documentation on both the product specified and the proposed substitution including the following information as appropriate.

    a. Comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
    b. Samples where applicable or requested.
    c. A detailed comparison of significant qualities of the proposed substitution with those of the work specified.
    d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors, that will become necessary to accommodate the proposed substitution.

4. Certification by the Contractor or manufacturer that the substitution proposed is equal-to or better in every respect to that required by the Contract Documents, and that it will perform equal or superior to product specified in the application indicated. The Contractor waives any right to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.

5. Architect's Action: The Architect may request additional information or documentation necessary for evaluation of the request. The Architect will notify the Contractors of acceptance of the proposed substitution by means of an addendum to the bid documents. If the proposed substitute is accepted through an addendum use the product specified by name.

B. Architect/Engineer's Substitution Approval during bidding and subsequent addendums does not void the Contractor's responsibility to submit the required shop drawings and comply with the other contract documents and requirements.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Conditions: The Contractor's substitution request will be received and considered by the Architect when all of the following conditions are satisfied, as determined by the Architect; otherwise requests will be returned without action except to record noncompliance with these requirements.

1. Extensive revisions to Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of Contract Documents.
3. The request is timely, fully documented and properly submitted.
4. The request is directly related to an "or equal" clause or similar language in the Contract Documents.

B. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an approval or valid request for substitution.

PART 3 - EXECUTION

A. Submit in format as outlined on following page.

PRODUCT SUBSTITUTION

Project _____

Date: _____ Bid Opening Date: _____

Product and / or Fabrication Method: _____

Spec Section: _____

Related Drawings: _____

Criteria or Specified Product	Included
Product Data	_____
Fabrication Drawings	_____
Samples Where Applicable	_____
List of changes or Modifications Needed to Work as Noted in Spec	_____

Criteria or Specified Product	Included
Product Data	_____
Fabrication Drawings	_____
Samples Where Applicable	_____
List of changes or Modifications Needed to Work as Noted in Spec	_____

The substitution proposed is equal-to or better in every respect to that required by the Contract Documents, and it will perform equal or superior to product specified in the application indicated. The Contractor waives right to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.

Signed: _____

END OF SECTION 01 25 00

SECTION 01 26 00 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.2 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.3 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
   1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
   2. Within 20 days receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
      a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
      b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
      c. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change.
   1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
   2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
   3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
   4. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

5. Comply with requirements in Division 01 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

C. Proposal Request Form: Use AIA Document G709

1.4 ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
   1. Include installation costs in purchase amount only where indicated as part of the allowance.
   2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
   3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
   4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within 21 days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than 21 days after such authorization.
   1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
   2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on the State Construction Form OC-24 available on the North Carolina State Construction website (http://www.nc-sco.com/docConstruction.aspx).

1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
   1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

   1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
   1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including Submittals Schedule and Application for Payment forms with Continuation Sheets.
   2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
   3. Subschedules: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
   1. Identification: Include the following Project identification on the Schedule of Values:
      a. Project name and location.
      b. Name of Architect.
      c. Architect's project number.
      d. Contractor's name and address.
      e. Date of submittal.
   2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
      a. Related Specification Section or Division.
      b. Description of the Work.
      c. Change Orders (numbers) that affect value.
      d. Dollar value.
         1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
   3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
   4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
   5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
   6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
   7. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by

measured quantity. Use information indicated in the Contract Documents to determine quantities.

8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
   1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
   1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
   2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

E. Transmittal: Submit a minimum of 3, or number agreed upon at pre-construction meeting, signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.
   1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
   1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
   2. When an application shows completion of an item, submit final or full waivers.
   3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
   4. Submit final Application for Payment with or preceeded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
   1. List of subcontractors.
   2. Schedule of Values.
   3. Contractor's Construction Schedule (preliminary if not final).
   4. Submittals Schedule (preliminary if not final).
   5. List of Contractor's staff assignments.
   6. Copies of building permits.
   7. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
   8. Certificates of insurance and insurance policies.
   9. Performance and payment bonds.
   10. Data needed to acquire Owner's insurance.

H. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
   1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
   2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
   1. Evidence of completion of Project closeout requirements.
   2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
   3. Updated final statement, accounting for final changes to the Contract Sum.
   4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
   5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
   6. AIA Document G707, "Consent of Surety to Final Payment."
   7. Evidence that claims have been settled.
   8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 29 00

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
   1. General project coordination procedures.
   2. Coordination Drawings.
   3. Administrative and supervisory personnel.
   4. Project meetings.

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 01 Section “Construction Progress Documentation” for preparing and submitting the Contractor’s Construction Schedule.
   2. Division 01 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
   3. Division 01 Section “Closeout Procedures” for coordinating Contract closeout.

1.3 COORDINATION

A. Coordination: The Contactor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. The Contractor shall coordinate its operations with operations, included in different Sections that depend on each other for proper installation, connection, and operation.
   1. Adjacent tenant spaces will be occupied during this construction period. Do not interrupt building access, services or utilities without first coordinating and scheduling such interruptions with the other tenants.
   2. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
   3. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
   4. Make adequate provisions to accommodate items scheduled for later installation.

B. Contact Progress Reporting: The scheduling and sequence of all operations shall be carefully coordinated with the Owner and Architect.

C. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
   1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
   1. Preparation of Contractor's Construction Schedule.
   2. Preparation of the Schedule of Values.
   3. Installation and removal of temporary facilities and controls.
   4. Delivery and processing of submittals.
   5. Progress meetings.
   6. Preinstallation conferences.
   7. Project closeout activities.

1.4 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
   1. Indicate relationship of components shown on separate Shop Drawings.
   2. Indicate required installation sequences.
   3. Refer to Divisions 21, 22 & 23 for specific Coordination Drawing requirements for fire suppression, plumbing and mechanical installations.
   4. Refer to Division 26 for specific Coordination Drawing requirements for electrical installations.

1.5 PROJECT MEETINGS

A. General Project Meetings: The Architect shall schedule and conduct a Project Pre-construction Meeting and Project Monthly Progress Meeting. The Architect will prepare and distribute minutes from these meetings, including date & location of next meeting. Project coordination meetings are in addition to specific meetings held for other purposes, such as pre-installation conferences. Schedule and conduct meetings and conferences at Project site, unless otherwise indicated
   1. The Contractor shall attend the monthly progress meetings for the purpose of informing the Owner and the Architect regarding the status of the project. The General Contractor shall provide an updated job progress schedule at each meeting
   2. Attendees: Owner, Contractor, Job Superintendent, Material Suppliers, and Subcontractors, as appropriate. Each representative shall be thoroughly familiar with the status of the project and shall be prepared to discuss and act upon any situations which may arise. The time, date and location of these meetings will be established during pre-construction conference. The General Contractor shall inform his personnel whose presence and participation is required, of date and time of each meeting.
   3. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
      a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      b. Schedule Updating: Revise Combined Contractor’s Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.

c. Review present and future needs of each entity present, including the following:
   1) Interface requirements.
   2) Sequence of operations.
   3) Status of submittals.
   4) Deliveries.
   5) Off-site fabrication.
   6) Access.
   7) Site utilization.
   8) Temporary facilities and controls.
   9) Work hours.
   10) Hazards and risks.
   11) Progress cleaning.
   12) Quality and work standards.
   13) Change Orders

B. Preconstruction Conference: A preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments. The Architect will compile minutes of the meeting, and will furnish a copy of the minutes to the Contractor and Owner.
   1. Attendees: Authorized representatives of Owner, Architect, Engineer's Representative, Contractor and their consultants; The Contractor and its job Superintendent (mandatory), job Foreman (mandatory), major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work. The Contractor shall also provide three (3) local telephone numbers which may be used to contact the Contractor or his authorized representative in the event of an emergency after normal business hours.
   2. Agenda: Discussion of Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, with the Architect and Owner, including channels and procedures for communication. Items of significance that could affect progress, including the following:
      a. Tentative construction schedule.
      b. Critical work sequencing.
      c. Designation of responsible personnel.
      d. Procedures for processing field decisions and Change Orders.
      e. Procedures for processing Applications for Payment.
      f. Distribution of the Contract Documents.
      g. Submittal procedures.
      h. Preparation of Record Documents.
      i. Use of the premises.
      j. Responsibility for temporary facilities and controls.
      k. Parking availability.
      l. Office, work, and storage areas.
      m. Equipment deliveries and priorities.
      n. First aid.
      o. Security.
      p. Progress cleaning.
      q. Working hours.
   3. At the pre-construction meeting, the General Contractor shall submit a schedule of values consisting of a detailed breakdown of the Contract amount showing separate figures for labor and material for each major work item (i.e., tear-off, insulation, membrane, surfacing, metal, asbestos abatement, etc.) The work listed under the various sections

and subsections of the Specifications will serve as the format for preparation of the breakdown.

4. The costs employed in making up any of these schedules will be used only for determining the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the contract price.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    a. Contract Documents.
    b. Options.
    c. Related Change Orders.
    d. Purchases.
    e. Deliveries.
    f. Submittals.
    g. Review of mockups, if any.
    h. Possible conflicts.
    i. Compatibility problems.
    j. Time schedules.
    k. Weather limitations.
    l. Manufacturer's written recommendations.
    m. Warranty requirements.
    n. Compatibility of materials.
    o. Acceptability of substrates.
    p. Space and access limitations.
    q. Regulations of authorities having jurisdiction.
    r. Testing and inspecting requirements.
    s. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements.
4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

SECTION 01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Preliminary Construction Schedule.
   2. Contractor's Construction Schedule.
   3. Submittals Schedule.

B. Related Sections include the following:
   1. Division 01 Section "Payment Procedures" for submitting the Schedule of Values.
   2. Division 01 Section “Project Management and Coordination” for submitting and distributing meeting and conference minutes.
   3. Division 01 Section “Submittal Procedures” for submitting schedules and reports.
   4. Division 01 Section “Quality Requirements” for submitting a schedule of tests and inspections.
   5. Division 01 Section "Closeout Procedures" for submitting photographic negatives as Project Record Documents at Project closeout.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
   1. Critical activities are activities on the critical path. They must start and finish on the planned early start and early finish times.
   2. Predecessor activity is an activity that must be completed before a given activity can be started.

B. Float: The measure of leeway in starting and completing an activity.
   1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
   2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
   3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

C. Major Area: A story of construction, a separate building, or a similar significant construction element.

D. Milestone: A key or critical point in time for reference or measurement.

1.4 SUBMITTALS

A. Submittals Schedule: Submit three (3) copies of schedule. Arrange the following information in a tabular format:
   1. Scheduled date for first submittal.
   2. Specification Section number and title.
   3. Submittal category (action or informational).
   4. Name of subcontractor.
   5. Description of the Work covered.

B. Preliminary Construction Schedule: Submit two (2) printed copies; one a single sheet of reproducible media and one a print.

C. Contractor's Construction Schedule: Submit two (2) printed copies of initial schedule, one a reproducible print and one a blue- or black-line print, large enough to show entire schedule for entire construction period.

D. Field Condition Reports: Submit one (1) copy at time of discovery of differing conditions.

E. Special Reports: Submit one (1) copy at time of unusual event.

1.5 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
   1. Secure time commitments for performing critical elements of the Work from parties involved.
   2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
   1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
   2. Initial Submittal: Submit concurrently with preliminary bar-chart schedule. Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication. Submit within two weeks from Notice to Proceed.
   3. Final Submittal: Submit concurrently with the first complete submittal of Contractor’s Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Procedures: Comply with procedures contained in AGC’s “Construction Planning & Scheduling.”

B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.

C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
   1. Activity Duration: Define activities so no activity is longer than twenty (20) days, unless specifically allowed by Architect.
   2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
   3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
   4. Startup and Testing Time: Include not less than ten (10) days for startup and testing.
   5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's and Construction Manager's administrative procedures necessary for certification of Substantial Completion.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within thirty (30) days of date established for the Notice to Proceed. Base schedule on whatever updating and feedback was received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
   1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in twenty (20) percent increments within time bar.

2.4 REPORTS

A. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare a detailed report. Submit with a request for information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
   1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
   2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
   3. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect, Owner, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
   1. Post copies in Project meeting rooms and temporary field offices.
   2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01 32 00

SECTION 01 33 00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

B. See Division 01 for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.

C. See Division 01 for submitting test and inspection reports and Delegated-Design Submittals and for erecting mockups.

D. See Division 01 for submitting warranties Project Record Documents and operation and maintenance manuals.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information that does not require Architect's approval. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

A. General: The Architect may, with the concurrence of the Owner, furnish to the Contractor versions of contract drawings in electronic form for Contractor's use in preparing submittals. See Paragraph 1.4 and 1.5 on the Contractor’s use of CAD Files

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
   1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
   2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
      a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Submittals Schedule: Comply with requirements in Division 01 for list of submittals and time requirements for scheduled performance of related construction activities.

D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal.
   1. Initial Review: **Allow 15 work days for initial review of each submittal**. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
   2. If intermediate submittal is necessary, process it in same manner as initial submittal.
   3. **Allow 15 work days for processing each resubmittal**.

4. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.

E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information on label for processing and recording action taken:
   a. Project name.
   b. Date.
   c. Name and address of Architect.
   d. Name and address of Contractor.
   e. Name and address of subcontractor.
   f. Name and address of supplier.
   g. Name of manufacturer.
   h. Unique identifier, including revision number.
   i. Number and title of appropriate Specification Section.
   j. Drawing number and detail references, as appropriate.
   k. Other necessary identification.

F. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.

G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.
1. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will discard submittals received from sources other than Contractor.
1. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.
2. Transmittal Form: Use AIA Document G810 or CSI Form 12.1A.
3. If a submittal is delivered to the Architect on digital media such as a CD or DVD, include a transmittal form with the package. If a submittal is sent electronically, include a digital transmittal form with the correspondence.

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

J. Use for Construction: Use only final submittals with mark indicating action taken by Architect in connection with construction.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

1. Submit one electronic copy in a digital file format. Digital file submittals must be legible and able to accept digital commenting from industry standard tools such as Adobe Acrobat. Digital file submittals shall not restrict the ability to be printed, the ability to have content copied, or the ability to have pages extracted or added.
2. The General Contractor will be responsible for printing any hard copies of the submittals otherwise required by the Owner, Building Inspector, Fire Marshall, or other reviewing body.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
    a. Manufacturer's written recommendations.
    b. Manufacturer's product specifications.
    c. Manufacturer's installation instructions.
    d. Manufacturer's catalog cuts.
    e. Wiring diagrams showing factory-installed wiring.
    f. Printed performance curves.
    g. Operational range diagrams.
    h. Compliance with recognized trade association standards.
    i. Compliance with recognized testing agency standards.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Include the following information, as applicable:
    a. Dimensions.
    b. Identification of products.
    c. Fabrication and installation drawings.
    d. Roughing-in and setting diagrams.
    e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    f. Shopwork manufacturing instructions.
    g. Templates and patterns.
    h. Schedules.
    i. Notation of coordination requirements.
    j. Notation of dimensions established by field measurement.
2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.

D. Coordination Drawings: Comply with requirements in Division 01.

E. Samples: Prepare physical units of materials or products, including the following:
1. Comply with requirements in Division 01 for mockups.
2. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    a. Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

3. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
   a. Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned.
4. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architect's sample where so indicated. Attach label on unexposed side.
5. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
6. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

F. Product Schedule or List: Prepare a written summary indicating types of products required for the Work and their intended location.

G. Delegated-Design Submittal: Comply with requirements in Division 01.

H. Submittals Schedule: Comply with requirements in Division 01.

I. Application for Payment: Comply with requirements in Division 01.

J. Schedule of Values: Comply with requirements in Division 01.

K. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.
2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
3. Test and Inspection Reports: Comply with requirements in Division 01.

B. Contractor's Construction Schedule: Comply with requirements in Division 01.

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.

G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.

H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.

I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.

J. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

K. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.

L. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

M. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

N. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "Closeout Procedures."

O. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

P. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.

Q. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections.

R. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

S. Construction Photographs: Comply with requirements in Division 1 Section "Construction Progress Documentation."

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
1. Reviewed
2. Revise as noted
3. Revise and resubmit
4. Rejected

C. Informational Submittals: Architect will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION 01 33 00

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
   1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
   2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Document requirements.
   3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:
   1. Division 01 Section “Cutting and Patching” for repair and restoration of construction disturbed by testing and inspecting activities.
   2. Review Divisions 02 through 49 sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Architect.

C. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.4 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
   1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

1.5 SUBMITTALS

A. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

B. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

C. Not later than 30 calendar days after the Notice to Proceed date, the contractor shall furnish to the Architect for review a complete list of all subcontractors and all material and equipment to be used in the Project showing the manufacturer, supplier, trade name, and model number of each. Where the specification allows a choice, the list shall indicate the Contractor’s choice. This list shall follow the sequence of the sections of the specifications.

1.6 QUALITY ASSURANCE

A. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

B. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

C. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

F. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

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

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.

E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field-curing of test samples.
5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
6. Security and protection for samples and for testing and inspecting equipment at Project site.

F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
2. Notify testing agency and Architect at least 48 hours in advance of time required to perform testing services.
3. Notify testing agency and Architect at least 72 hours in advance to inspect concrete reinforcing placement prior to pouring concrete or grouting masonry.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
   1. Comply with the Contract Document requirements for Division 01 Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Installer": Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

J. "Experienced": When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

K. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

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

C. Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

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

ADAAG	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities	
	Available from Access Board	(800) 872-2253
	www.access-board.gov	(202) 272-5434
CFR	Code of Federal Regulations	
	Available from Government Printing Office	(888) 293-6498
	www.access.gpo.gov/nara/cfr	(202) 512-1530
FED-STD	Federal Standard (See FS)	
FS	Federal Specification	
	Available from National Institute of Building Sciences	(202) 289-7800
	www.nibs.org	

1.4 ABBREVIATIONS AND ACRONYMS

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

AA	Aluminum Association, Inc. (The)	(202) 862-5100
	www.aluminum.org	

AAADM	American Association of Automatic Door Manufacturers www.aaadm.com	(216) 241-7333
AAMA	American Architectural Manufacturers Association www.aamanet.org	(847) 303-5664
ACI	American Concrete Institute/ACI International www.aci-int.org	(248) 848-3700
ACPA	American Concrete Pipe Association www.concrete-pipe.org	(972) 506-7216
AF&PA	American Forest & Paper Association www.afandpa.org	(800) 878-8878 (202) 463-2700
AGC	Associated General Contractors of America (The) www.agc.org	(703) 548-3118
AHA	American Hardboard Association www.ahardbd.org	(847) 934-8800
AI	Asphalt Institute www.asphaltinstitute.org	(859) 288-4960
AIA	American Institute of Architects (The) www.e-architect.com	(202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction www.aitc-glulam.org	(303) 792-9559
ALCA	Associated Landscape Contractors of America www.alca.org	(800) 395-2522 (703) 736-9666
ALSC	American Lumber Standard Committee	(301) 972-1700
ANLA	American Nursery & Landscape Association www.anla.org	(202) 789-2900
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600
APA	Architectural Precast Association www.archprecast.org	(941) 454-6989
ASCE	American Society of Civil Engineers www.asce.org	(800) 548-2723 (703) 295-6300
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (The American Society of Mechanical Engineers International) www.asme.org	(800) 843-2763 (212) 591-7722
ASTM	American Society for Testing and Materials www.astm.org	(610) 832-9585
AWI	Architectural Woodwork Institute www.awinet.org	(800) 449-8811 (703) 733-0600
AWPA	American Wood-Preservers' Association www.awpa.com	(817) 326-6300
AWS	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
BIA	Brick Industry Association (The)	(703) 620-0010

	www.bia.org	
CCFSS	Center for Cold-Formed Steel Structures www.umr.edu/~ccfss	(573) 341-4471
CDA	Copper Development Association Inc. www.copper.org	(800) 232-3282 (212) 251-7200
CIMA	Cellulose Insulation Manufacturers Association www.cellulose.org	(888) 881-2462 (937) 222-2462
CISCA	Ceilings & Interior Systems Construction Association www.cisca.org	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute www.cispi.org	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute www.chainlinkinfo.org	(301) 596-2583
CPA	Composite Panel Association (Formerly: National Particleboard Association) www.pbmdf.com	(301) 670-0604
CPPA	Corrugated Polyethylene Pipe Association www.cppa-info.org	(800) 510-2772 (202) 462-9607
CRSI	Concrete Reinforcing Steel Institute www.crsi.org	(847) 517-1200
CSI	Construction Specifications Institute (The) www.csinet.org	(800) 689-2900 (703) 684-0300
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
EIMA	EIFS Industry Members Association www.eifsfacts.com	(800) 294-3462 (770) 968-7945
EJMA	Expansion Joint Manufacturers Association, Inc. www.ejma.org	(914) 332-0040
FMG (FM)	FM Global (Formerly: FM - Factory Mutual System) www.fmglobal.com	(401) 275-3000
GA	Gypsum Association www.gypsum.org	(202) 289-5440
GANA	Glass Association of North America (Formerly: FGMA - Flat Glass Marketing Association) www.glasswebsite.com/gana	(785) 271-0208
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900
IGCC	Insulating Glass Certification Council www.igcc.org	(315) 646-2234
KCMA	Kitchen Cabinet Manufacturers Association www.kcma.org	(703) 264-1690
LGSI	Light Gage Structural Institute www.loseke.com	(972) 370-0967
LMA	Laminating Materials Association (Formerly: ALA - American Laminators Association) www.lma.org	(201) 664-2700
MBMA	Metal Building Manufacturers Association www.mbma.com	(216) 241-7333
MCA	Metal Construction Association www.metalconstruction.org	(312) 201-0193
MFMA	Metal Framing Manufacturers Association	(312) 644-6610
MIA	Marble Institute of America www.marble-institute.com	(614) 228-6194
NAAMM	National Association of Architectural Metal Manufacturers	(312) 332-0405

	www.naamm.org	
NAIMA	North American Insulation Manufacturers Association (The) www.naima.org	(703) 684-0084
NCMA	National Concrete Masonry Association www.ncma.org	(703) 713-1900
NCPI	National Clay Pipe Institute www.ncpi.org	(414) 248-9094
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association www.netaworld.org	(303) 697-8441
NFPA	National Fire Protection Association www.nfpa.org	(800) 344-3555 (617) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-6372
NGA	National Glass Association www.glass.org	(703) 442-4890
NHLA	National Hardwood Lumber Association www.natlhardwood.org	(800) 933-0318 (901) 377-1818
NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393
NPA	National Particleboard Association (See CPA)	
NRCA	National Roofing Contractors Association www.nrca.net	(800) 323-9545 (847) 299-9070
NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(888) 846-7622 (301) 587-1400
NSA	National Stone Association www.aggregates.org	(800) 342-1415 (703) 525-8788
NTMA	National Terrazzo and Mosaic Association, Inc. www.ntma.com	(800) 323-9736 (703) 779-1022
NWWDA	National Wood Window and Door Association (See WDMA)	
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300
PDCA	Painting and Decorating Contractors of America www.pdca.com	(800) 332-7322 (703) 359-0826
PDI	Plumbing & Drainage Institute www.pdionline.org	(800) 589-8956 (508) 230-3516
RCSC	Research Council on Structural Connections www.boltcouncil.org	(800) 644-2400 (312) 670-2400
RMA	Rubber Manufacturers Association www.rma.org	(800) 220-7620 (202) 682-4800
SDI	Steel Deck Institute www.sdi.org	(847) 462-1930
SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
SIGMA	Sealed Insulating Glass Manufacturers Association www.sigmaonline.org/sigma	(312) 644-6610
SJI	Steel Joist Institute	(843) 626-1995

	www.steeljoist.org	
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division) www.sprayfoam.org	(800) 523-6154
SPI	The Society of the Plastics Industry www.plasticsindustry.org	(202) 974-5200
SPIB	Southern Pine Inspection Bureau (The) www.spib.org	(850) 434-2611
SPRI	SPRI (Single Ply Roofing Institute) www.spri.org	(781) 444-0242
SSINA	Specialty Steel Industry of North America www.ssina.com	(800) 982-0355 (202) 342-8630
SSMA	Steel Stud Manufacturers Association (Formerly: ML/SFA - Metal Lath/Steel Framing Association) www.ssma.com	(312) 456-5590
SSPC	SSPC: The Society for Protective Coatings www.sspc.org	(800) 837-8303 (412) 281-2331
SWI	Steel Window Institute www.steelwindows.com	(216) 241-7333
TCA	Tile Council of America, Inc. www.tileusa.com	(864) 646-8453
TPI	Truss Plate Institute	(608) 833-5900
UL	Underwriters Laboratories Inc. www.ul.com	(800) 704-4050 (847) 272-8800
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) www.wdma.com	(800) 223-2301 (847) 299-5200
WMMPA	Wood Moulding & Millwork Producers Association www.wmmpa.com	(800) 550-7889 (530) 661-9591
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

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

BOCA	BOCA International, Inc. www.bocai.org	(708) 799-2300
IAPMO	International Association of Plumbing and Mechanical Officials (The) www.iapmo.org	(909) 595-8449
ICBO	International Conference of Building Officials www.icbo.org	(800) 284-4406 (562) 699-0541
ICC	International Code Council (Formerly: CABO - Council of American Building Officials) www.intlcode.org	(703) 931-4533
SBCCI	Southern Building Code Congress International, Inc. www.sbcci.org	(205) 591-1853

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

CPSC	Consumer Product Safety Commission www.cpsc.gov	(800) 638-2772 (301) 504-0990
EPA	Environmental Protection Agency www.epa.gov	(202) 260-2090
OSHA	Occupational Safety & Health Administration www.osha.gov	(202) 693-1999
USPS	Postal Service www.usps.com	(202) 268-2000

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 42 00

SECTION 01 50 00 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.

B. See Supplementary General Conditions for additional requirements pertaining to temporary utilities.

C. See Division 01 for progress cleaning requirements.

1.2 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weather tight; exterior walls are insulated and weather tight; and all openings are closed with permanent construction or substantial temporary closures.

1.3 USE CHARGES

A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, occupants of testing and inspecting agencies and personnel of authorities having jurisdiction.

B. Sewer Service: Pay sewer service use charges for sewer usage, by all parties engaged in construction, at Project site.

C. Water Service: Contractor can use water service from the existing Building.

D. Electric Power Service: Contractor can use electric power service from the existing Building.

1.4 SUBMITTALS

A. Temporary Utility Reports: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.

1.5 QUALITY ASSURANCE

A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
   1. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.
   1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service

during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
   1. Keep temporary services and facilities clean and neat.
   2. Relocate temporary services and facilities as required by progress of the Work.

C. Parking and Traffic Control: Contractor shall be responsible for obtaining and erecting street/parking lot signage as necessary to divert traffic away from staging areas, etc. Contractor is to coordinate signage requirements with the Town and Architect. All associated costs are to be borne by the Contractor. Contractor shall provide area for parking for subcontractors, Architect and Owner representatives.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.

B. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.

2.2 EQUIPMENT

A. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
   1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

B. Heating Equipment: Unless Owner authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
   1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
   2. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.

C. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.

D. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Engage appropriate local utility company to install temporary service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.
   1. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.
   2. Obtain easements to bring temporary utilities to Project site where Owner's easements cannot be used for that purpose.

B. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.
   1. Filter out excessive soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
   2. Connect temporary sewers to municipal system as directed by sewer department officials.
   3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. After heavy use, restore normal conditions promptly.
   4. Provide temporary filter beds, settlement tanks, separators, and similar devices to purify effluent to levels acceptable to authorities having jurisdiction.

C. Water Service: Contractor can use water service from the existing Building. Install water service and distribution piping in sizes and pressures adequate for construction until permanent water service is in use. Sterilize temporary water piping before use.
   1. Provide rubber hoses as necessary to serve Project site.

D. Sanitary Facilities: Contractor can use existing toilets, wash facilities, and drinking-water fixtures. Contractor need to use these facilitates will good care and be responsible.

E. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed.
   1. Maintain a minimum temperature of 50 deg F in permanently enclosed portions of building for normal construction activities, and 65 deg F for finishing activities and areas where finished Work has been installed.

F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

G. Electric Power Service: Contractor can use electric power service from the existing Building. Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.
   1. Install electric power service underground, unless overhead service must be used.

2. Install power distribution wiring overhead and rise vertically where least exposed to damage.

H. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.
1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
2. Provide one 100-W incandescent lamp per 500 sq. ft., uniformly distributed, for general lighting, or equivalent illumination.
3. Provide one 100-W incandescent lamp every 50 feet in traffic areas.
4. Provide one 100-W incandescent lamp per story in stairways and ladder runs, located to illuminate each landing and flight.
5. Install exterior-yard site lighting that will provide adequate illumination for construction operations, traffic conditions, and signage visibility when the Work is being performed.

J. Telephone Service: Provide temporary telephone service throughout construction period for common-use facilities used by all personnel engaged in construction activities.
1. At each telephone, post a list of important telephone numbers, including police and fire departments, ambulance service, Architects’ office, Engineers' offices and Owner's office.
2. Provide an answering machine or voice-mail service and a facsimile machine on superintendent's telephone.
3. Furnish superintendent with electronic paging device for use when away from field office.
4. Provide a portable cellular telephone for superintendent's use in making and receiving telephone calls when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:
1. Locate storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access. Coordinate with Owner on location.
2. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
3. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Dewatering Facilities and Drains: Comply with requirements in applicable Division 31 Sections for temporary drainage and dewatering facilities and operations not directly associated with construction activities included in individual Sections. Where feasible, use same facilities. Maintain Project site, excavations, and construction free of water.

C. Temporary Signs: Prepare signs in sizes indicated. Install signs where indicated to inform public and persons seeking entrance to Project. Do not permit installation of unauthorized signs.
1. Prepare temporary signs to provide directional information to construction personnel and visitors.

D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Comply with Division 01 Section for progress cleaning requirements.
   1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.

E. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility services. Sheds may be open shelters or fully enclosed spaces within building or elsewhere on-site.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.

B. Material Storage Enclosure Fence: Install enclosure fence with lockable gates to completely enclose and hide the materials storage, or store as much material in locked trailers as practicable.
   1. Set fixed 6’-0” high chain-link fence posts in compacted mixture of gravel and earth.

C. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

D. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.

E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
   1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
   2. Vertical Openings: Close openings of 25 sq. ft. or less with plywood or similar materials.
   3. Horizontal Openings: Close openings in floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
   4. Install tarpaulins securely using fire-retardant-treated wood framing and other materials.
   5. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
   6. Protect air-handling equipment.
   7. Weatherstrip openings.

F. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
   1. Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.
      a. Locate fire extinguishers where convenient and effective for their intended purpose.

2. Store combustible materials in containers in fire-safe locations.
3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for firefighting. Prohibit smoking in hazardous fire-exposure areas.
4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
5. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
6. Provide hoses for fire protection of sufficient length to reach construction areas. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 OPERATION, TERMINATION AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.
   1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
   2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
   1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.
   2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 01 Section "Closeout Procedures."

END OF SECTION 01 50 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following administrative and procedural requirements: selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

B. Related Sections include the following:
   1. Division 01 Section “Alternates” for products selected under an alternate.
   2. Division 01 Section “References” for applicable industry standards for products specified.
   3. Division 01 Section "Closeout Procedures" for submitting warranties for contract closeout.
   4. Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

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

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

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

D. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.

E. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

1.4 SUBMITTALS

A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
   1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
   2. Form:
      a. Specification Section number and title.
      b. Proprietary name, model number, and similar designations
      c. Manufacturer’s name and address.
      d. Supplier’s name and address.
      e. Installer’s name and address.
      f. Identification of items that require early submittal approval for scheduled delivery date.
   3. Completed List: Within thirty (30) days after date of commencement of the Work, submit three (3) copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
   4. Architect's Action: Architect will respond in writing to Contractor within fifteen (15) days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement that products comply with the Contract Documents.

B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
   1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
      a. Statement indicating why specified material or product cannot be provided.
      b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
      c. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
      d. Samples, where applicable or requested.
      e. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
      f. Cost information, including a proposal of change, if any, in the Contract Sum.
      g. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
      h. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
   a. Form of Acceptance: Change Order.
   b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
   1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
   2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
   1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
   2. Specified Form: Forms are included with the Specifications. Prepare a written document using appropriate form properly executed.
   3. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

D. All warranties/guarantees shall become effective on the date of Substantial Completion as established by the Architect. Written warranties/guarantees shall be signed by the manufacturer or subcontractor and countersigned by the Contractor. All warranties/guarantees shall be addressed to the Owner in care of the Architect.

PART 2 - PRODUCTS

2.1 PRODUCT OPTIONS

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

B. Product Selection Procedures: Procedures for product selection include the following:
   1. Products: Where Specification paragraphs or subparagraphs titled "Products" introduce a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
      a. Substitutions may be considered**,** unless otherwise indicated.

   2. Manufacturers: Where Specification paragraphs or subparagraphs titled "Manufacturers" introduce a list of manufacturers’ names, provide a product by the manufacturers that complies with requirements.
      a. Substitutions may be considered**,** unless otherwise indicated.
   3. Available Products: Where Specification paragraphs or subparagraphs titled "Available Products" introduce a list of names of both products and manufacturers, provide one of the products listed or another product that complies with requirements. Comply with

provisions in “Comparable Products” article to obtain approval for use of an unnamed product.

4. Available Manufacturers: Where Specification paragraphs or subparagraphs titled "Available Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed or another manufacturer that complies with requirements. Comply with provisions in “Comparable Products” article to obtain approval for use of an unnamed product.
5. Product Options: Where Specification paragraphs titled "Product Options” indicate that size, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide either the specific product or system indicated or a comparable product or system by another manufacturer. Comply with provisions in “Product Substitutions” article.
6. Basis-of-Design Products: Where Specification paragraphs or subparagraphs titled "Basis-of-Design Product" are included and also introduce or refer to a list of manufacturers' names, provide either the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in "Comparable Products" Article to obtain approval for use of an unnamed product.
    a. Substitutions may be considered, unless otherwise indicated.
7. Visual Matching Specification: Where Specifications require matching an established Sample, select a product (and manufacturer) that complies with requirements and matches Architect’s sample. Architect’s decision will be final on whether a proposed product matches satisfactorily.
    a. If no product available within specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents on “substitutions” for selection of a matching product.
8. Visual Selection Specification: Where Specifications include the phrase “as selected from manufacturer’s colors, patterns, textures” or a similar phrase, select a product (and manufacturer) that complies with other specified requirements.
    a. Standard Range: Where Specifications include the phrase “standard range of colors, patterns, textures” or similar phrase, Architect will select color, pattern, or texture from manufacturer’s product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase “full range of colors, patterns, textures” or similar phrase, Architect will select color, pattern, or texture from manufacturer’s product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution if received within thirty (30) days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

2. Requested substitution must be made in writing directly from the Contractor and not from a subcontractor or material supplier.
3. Requested substitution does not require extensive revisions to the Contract Documents.
4. Requested substitution is consistent with the Contract Documents and will produce indicated results.
5. Substitution request is fully documented and properly submitted.
6. Requested substitution will not adversely affect Contractor's Construction Schedule.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work and that he waives all claims for additional reimbursement related to the substitution which subsequently become apparent.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
11. By forwarding a substitution request the Contractor represents that he has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified.

2.3 COMPARABLE PRODUCTS

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

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 01 73 00 – EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
   1. Construction layout.
   2. Field engineering and surveying.
   3. General installation of products.
   4. Coordination of Owner-installed products.
   5. Progress cleaning.
   6. Starting and adjusting.
   7. Protection of installed construction.
   8. Correction of the Work.

B. Related Sections include the following:
   1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
   2. Division 01 Section "Submittal Procedures" for submitting surveys.
   3. Division 01 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
   4. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 QUALITY ASSURANCE

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of construction affecting the Work.
   1. Before construction, verify the location and points of connection of utility services.

B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
   a. Description of the Work.
   b. List of detrimental conditions, including substrates.
   c. List of unacceptable installation tolerances.
   d. Recommended corrections.
2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions. Upon acceptance of surfaces and conditions, any adjustments required for a satisfactory installation shall be made by the Contractor who accepted the Work.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
3. Inform installers of lines and levels to which they must comply.
4. Check the location, level and plumb, of every major element as the Work progresses.
5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

3.4 FIELD ENGINEERING

A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

B. Benchmarks: Establish and maintain a minimum of two (2) permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.5 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
   1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
   2. Allow for building movement, including thermal expansion and contraction.

G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
   1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
   2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
   3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
   1. Remove liquid spills promptly.
   2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
   1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.9 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."
   1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 73 00

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:
   1. Division 07 Section "Through-Penetration Firestop Systems" for patching fire-rated construction.
   2. Divisions 02 through 49 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
      a. Requirements in this Section apply to mechanical and electrical installations. Refer to Divisions 23 and 26 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.3 DEFINITIONS

A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
   1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
   2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
   3. Products: List products to be used and firms or entities that will perform the Work.
   4. Dates: Indicate when cutting and patching will be performed.
   5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

C. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

D. Cutting and Patching Conference: If extensive cutting and patching is required, before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.6 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections of these Specifications.

B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
   1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
   2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
   3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
   4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
   5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
   6. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as

possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

END OF SECTION 01 73 29

SECTION 01 74 13 – PROGRESS AND FINAL CLEANING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for progress cleaning and final cleaning.

1.2 ACTION SUBMITTALS

A. Product Data:

1. Cleaning Products: Indicate compliance with quality assurance requirements.
2. Disinfectants, Metal Polish, Floor Finishes, and Strippers: Indicate compliance with quality assurance requirements.

B. Equipment Data: Indicate equipment used for final cleaning complies with quality assurance requirements.

C. Product Application Schedule: Schedule of cleaning products indicating application for each type of product.

1.3 INFORMATIONAL SUBMITTALS

A. Inspection Reports: For pest control final inspection

1.4 QUALITY ASSURANCE

A. Product Requirements:
1. Cleaning Products: Comply with Green Seal GS-37.
2. Floor Finishes, and Strippers: Comply with Green Seal GS-40.
3. Disinfectants and Metal Polish: Industry standard products with low toxicity and low VOC content.

B. Worker Qualifications: Provide cleaning services performed by experienced firm specializing in cleaning of new construction of similar type and scope, employing workers trained by suppliers of products and equipment utilized in progress and final cleaning.

C. Equipment Certification: Perform final cleaning utilizing vacuum equipment certified under Carpet and Rug Institute Green Label program, equipped with HEPA filters.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials, General: Do not introduce cleaning agents, disinfectants, metal polishes, floor strippers, or other products into the facility that are not listed on approved product application schedule.

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

1. Unless otherwise indicated, use cleaning products that meet Green Seal GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

C. Disinfectants, Metal Polishes, Floor Strippers, and Other Products: Use materials and agents recommended by manufacturer or fabricator of the affected surface. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Unless otherwise indicated, use cleaning products that meet Green Seal GS-40, or if GS-40 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

D. Floor Sealer Products: Submit proposed products for approval by Owner.

PART 3 - EXECUTION

3.1 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
   a. Utilize containers intended for holding waste materials of type to be stored.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Final Approval.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Final Approval.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

3.2 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations. Leave Project clean and ready for occupancy.

B. Cleaning: Clean each surface or unit to quality level specified. Comply with product manufacturer's and equipment manufacturer's written instructions.

C. Complete the following cleaning operations before requesting inspection for certification of Final Approval for entire Project or for a portion of Project:

1. Project Site
   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
   b. Sweep paved areas broom clean; wash walkways clean. Remove petrochemical spills, stains, and other foreign deposits. Apply additional cleaning methods if indicated on the drawings.
   c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
   d. Remove tools, construction equipment, machinery, and surplus material from Project site.
   e. Remove snow and ice to provide safe access to building.

2. Building Exterior and Interior
   a. Clean all exposed exterior and interior hard-surfaced finishes, previously existing and new, to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
   b. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
   c. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or

broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.

d. Remove labels and protective films that are not permanent unless otherwise indicated as decal/signage required by the design.
e. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
f. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint from surface to provide intended readability.
g. Clean both sides of windows and vision lights, previously existing and new.

3. Building Interior
   a. Clean and disinfect plumbing fixtures, vanity tops, and countertops to a sanitary condition, free of stains, including stains resulting from water exposure.
   b. Move and reset Owner's furniture, fixtures, and equipment as required to complete cleaning Work. Clean furniture, fixtures, and equipment that have become soiled following Owner's installation.
   c. Remove debris and surface dust from occupied spaces including window treatments, furniture and shelving, casework and cabinets interiors and tops, and other surfaces as required.

4. Equipment and Systems
   a. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
   b. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
   c. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
   d. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter upon inspection. Coordinate cleaning of ductwork with other closeout procedures.
   e. Clean light fixtures, lamps, globes, and reflectors, previously existing and new, to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

D. Floor Cleaning and Finishing:
   1. Vacuum building surfaces using approved vacuum equipment.

   2. Resilient Flooring: Sweep, mop, strip, wax, and buff flooring in accordance with floor wax product manufacturer's recommendations.
      a. Apply wax at 3 micron dry film thickness per coat.
      b. Rooms: Strip and apply five coats of wax and buff.
      c. Corridors: Apply first two coats of wax prior to Owner's setting furniture in rooms. Following setting of furniture, strip floors and apply final five coats of wax and buff.

   3. Hard Tile Flooring: Scrub mop. Do not apply wax to hard tile flooring.

   4. Carpet: Vacuum carpet, removing debris and excess nap.
      a. Vacuum carpet using approved vacuum equipment.

b. Clean new carpet using steam extraction method if visible soil or stains remain.

5. Concrete Floors: Vacuum and mop sealed concrete floors in unoccupied spaces.

E. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.

F. Construction Waste Disposal: Comply with waste disposal requirements in Division 01 Section "Construction Waste Management & Disposal."

END OF SECTION 01 74 13

SECTION 01 74 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Salvaging non-hazardous demolition and construction waste.
2. Recycling non-hazardous demolition and construction waste.
3. Disposing of non-hazardous demolition and construction waste.

B. See Division 02 Section "Selective Structure Demolition" for disposition of waste resulting from partial demolition of buildings, structures and site improvements.

1.2 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 PERFORMANCE REQUIREMENTS

A. General: Develop waste management plan that results in end-of-Project rates for salvage/recycling of 50 percent by weight or volume of total waste generated by the Work.

B. Salvage/Recycle Requirements: Owner's goal is to salvage and recycle as much nonhazardous demolition and construction waste as possible. The contractor is to monitor and track the quantity of waste and recycled/salvaged material and present a summary of this information periodically during construction. A final summary will be required at the end of the project.

1.4 SUBMITTALS

A. Waste Management Plan: Submit 3 copies of plan within 2 weeks after the Notice to Proceed.

B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit 3 copies of report. Include separate reports for demolition and construction waste. Include the following information:

1. Material category.
2. Generation point of waste.
3. Total quantity of waste in weight or volume.
4. Quantity of waste salvaged in weight or volume.
5. Quantity of waste recycled in weight or volume.
6. Total quantity of waste recovered (salvaged plus recycled) in weight or volume.
7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

C. Waste Reduction Calculations: Before request for Substantial Completion, submit 3 copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

D. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

E. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

H. Qualification Data: For Waste Management Coordinator and refrigerant recovery technician.

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

1.5 QUALITY ASSURANCE

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

B. Waste Management Conference: Conduct conference at Project site

1.6 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification and waste reduction work plan. Include separate sections in plan for demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement waste management plan as approved by Architect. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

B. Waste Management Coordinator: Assign a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

1. Distribute waste management plan to everyone concerned within 3 days of submittal return.
2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Division 01 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Sale and Donation: Is not permitted on Project site.

C. Salvaged Items for Owner's Use:

1. Clean salvaged items.
2. Store items in a secure area until delivery to Owner.
3. Protect items from damage.

3.3 GENERAL WASTE RECYCLING

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to the **Contractor**.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.

1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

A. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.

B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

D. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.

E. Metals: Separate metals by type.

1. Structural Steel: Stack members according to size, type of member, and length.
2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

F. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.

G. Acoustical Ceiling Panels and Tile:

1. Separate suspension system, trim, and other metals from panels and tile and sort with other metals.

H. Carpet: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.

1. Store clean, dry carpet in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.

I. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.

J. Plumbing Fixtures: Separate by type and size.

K. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.

L. Lighting Fixtures: Separate lamps by type and protect from breakage.

M. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

N. Conduit: Reduce conduit to straight lengths and store by type and size.

3.5 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Site-Clearing Wastes: Chip brush, branches, and trees.

C. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

D. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.

1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.6 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

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

END OF SECTION 01 74 19

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Inspection procedures.
   2. Project Record Documents.
   3. Operation and maintenance manuals.
   4. Warranties.
   5. Instruction of Owner's personnel.
   6. Final cleaning.

B. See Division 01 for requirements for Applications for Payment for Final Acceptance.

C. See Division 01 for submitting Final Completion construction photographs and negatives.

D. See Divisions 02 through 49 for specific closeout and special cleaning requirements for products of those Sections.

1.2 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting inspection for determining date of Final acceptance, complete the following. List items below that are incomplete in request.
   1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
   2. Advise Owner of pending insurance changeover requirements.
   3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
   4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
   5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
   6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
   7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
   8. Complete startup testing of systems.
   9. Submit test/adjust/balance records.
   10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
   11. Advise Owner of changeover in heat and other utilities.
   12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
   13. Complete final cleaning requirements, including touchup painting.
   14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Final acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Final acceptance after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
   2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
   1. Submit a final Application for Payment according to Division 01.
   2. Submit certified copy of Architect's Final acceptance inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
   3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
   4. Submit pest-control final inspection report and warranty.
   5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

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

1.5 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.

1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
    a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
    b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
3. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
4. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.

C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Note related Change Orders and Record Drawings, where applicable.

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

1.6 OPERATION AND MAINTENANCE MANUALS

A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:
1. Operation Data: Include emergency instructions and procedures, system and equipment descriptions, operating procedures, and sequence of operations.
2. Maintenance Data: Include manufacturer's information, list of spare parts, maintenance procedures, maintenance and service schedules for preventive and routine maintenance, and copies of warranties and bonds.

B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Final acceptance is indicated.

B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
   1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
   2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
   3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 DEMONSTRATION AND TRAINING

A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
   1. Provide instructors experienced in operation and maintenance procedures.
   2. Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.
   3. Schedule training with Owner, through Architect, with at least seven days' advance notice.
   4. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.

B. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections. For each training module, develop a learning objective and teaching outline.
   1. Include instruction for system design and operational philosophy, review of documentation, operations, adjustments, troubleshooting, maintenance, and repair.

3.2 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
   1. Complete the following cleaning operations before requesting inspection for certification of Final acceptance for entire Project or for a portion of Project:

a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
g. Sweep concrete floors broom-clean in unoccupied spaces.
h. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
i. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
j. Remove labels that are not permanent.
k. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
l. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
m. Replace parts subject to unusual operating conditions.
n. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
o. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
q. Leave Project clean and ready for occupancy.

C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.

D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 77 00

Division 02 – Existing Conditions

SECTION 02 41 19 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

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

1.2 DEFINITIONS

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

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

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

1.3 SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate detailed sequence of selective demolition and removal work, with starting and ending dates for each activity, interruption of utility services and locations of temporary partitions and means of egress.

1.4 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

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

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

D. Standards: Comply with ANSI A10.6 and NFPA 241.

E. Pre-demolition Conference: Conduct conference at Project site.

1.5 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical. Furnishings, Owner Equipment, and items in which the Owner’s intent is salvage & reuse

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

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

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

E. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.

F. Hazardous Materials: Hazardous materials are present in construction to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous material remediation is specified elsewhere in the Contract Documents.
2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.

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

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

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

1.6 WARRANTY

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

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

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

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

E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

F. Survey of Existing Conditions: Record existing conditions by use of measured drawings and preconstruction photographs.

G. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Arrange to shut off indicated utilities with utility companies.
2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

3.3 PREPARATION

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

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

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

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

3.4 SELECTIVE DEMOLITION

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

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
5. Dispose of demolished items and materials promptly.

B. Removed and Salvaged Items:

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

C. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.

2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition, cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

B. Burning: Do not burn demolished materials.

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

3.6 CLEANING

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

END OF SECTION 02 41 19

Division 05 - Metals

SECTION 05 40 00 - COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Exterior load-bearing wall framing.
   2. Interior load-bearing wall framing.

1.2 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide cold-formed metal framing capable of withstanding design loads without deflections greater than the following:
   1. Interior Load-Bearing Wall Framing: Horizontal deflection of **1/240** of the wall height.

1.3 SUBMITTALS

A. Product Data: For each product indicated.

B. Shop Drawings: Include layout, spacings, sizes, thicknesses, and types of cold-formed metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners.
   1. Include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Mill certificates.

D. Welder certificates.

1.4 QUALITY ASSURANCE

A. Comply with AISI's "Specification for the Design of Cold-Formed Steel Structural Members" for calculating structural characteristics of cold-formed metal framing.
   1. Engineering Responsibility: Engage a qualified professional engineer to prepare design calculations, Shop Drawings, and other structural data.

B. Mill certificates signed by steel sheet producer or test reports from a qualified independent testing agency.

C. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel," and AWS D1.3, "Structural Welding Code--Sheet Steel."

D. Fire-Test-Response Characteristics: Where metal framing is part of a fire-resistance-rated assembly, provide framing identical to that of assemblies tested for fire resistance per ASTM E 119 by a testing agency acceptable to authorities having jurisdiction.
   1. Fire-Resistance Ratings: Indicated by GA File Numbers in GA-600, "Fire Resistance Design Manual," or by design designations from UL's "Fire Resistance Directory" or from the listings of another testing agency.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Clark Steel Framing Industries.
   2. Consolidated Systems, Inc.
   3. Dale Industries, Inc.
   4. Dietrich Industries, Inc.
   5. MarinoWare; Div. of Ware Industries, Inc.
   6. Steel Construction Systems.
   7. Super Stud Building Products, Inc.
   8. Unimast, Inc.

2.2 MATERIALS

A. Steel Sheet: ASTM A 653/A 653M, structural steel, G60 zinc coating, Grade 33 for minimum uncoated steel thickness of 0.0428 inch and less; Grade 50 for minimum uncoated steel thickness of 0.0538 inch and greater.

B. Wall Framing: Manufacturer's standard steel studs, of web depths indicated, with stiffened flanges, complying with ASTM C 955, and as follows:
   1. Minimum Uncoated-Steel Thickness: As noted on Structural Drawings.
   2. Flange Width: As noted on Structural Drawings.
   3. Coatings: Standard coating of G60 (Z180). Use G90 (Z275) coating when steel-stud framing serves as a backup to brick veneer.
   4. Track: Manufacturer's standard U-shaped steel track, unpunched, with straight flanges, complying with ASTM C 955, manufacturer's standard flange width, and minimum uncoated-steel thickness matching steel studs.

2.3 ACCESSORIES AND MISCELLANEOUS MATERIALS

A. Fabricate steel-framing accessories of the same material and finish used for framing members, with a minimum yield strength of 33,000 psi, of manufacturer's standard thickness and configuration, unless otherwise indicated.

B. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123.

C. Anchor Bolts: ASTM F 1554, Grade 36, threaded carbon-steel hex-headed bolts and carbon-steel nuts; and flat, hardened-steel washers.

D. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

E. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified independent testing agency.

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

G. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.

H. Thermal Insulation: ASTM C 665, Type I, unfaced mineral-fiber blankets produced by combining glass or slag fibers with thermosetting resins.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Preparation: Grout bearing surfaces uniform and level to ensure full contact of bearing flanges or track webs on supporting concrete or masonry construction. Contact of bearing flanges or track webs on supporting concrete or masonry construction.

B. Install cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to ASTM C 1007, manufacturer's written recommendations, and requirements in this Section.
1. Cut framing members by sawing or shearing; do not torch cut.
2. Fasten cold-formed metal framing members by welding or screw fastening, as standard with fabricator. Wire tying of framing members is not permitted.
3. Install framing members in one-piece lengths.
4. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed.
5. Install insulation in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.
6. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's standard punched openings.

C. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

D. Load-Bearing Wall Installation: Install continuous top and bottom tracks sized to match studs. Align tracks accurately and securely anchor at corners and ends. Squarely seat studs against webs of top and bottom tracks. Space studs as indicated, set plumb, align, and fasten both flanges of studs to top and bottom tracks.
1. Align studs vertically where wall-framing continuity is interrupted by floor framing. Where studs cannot be aligned, continuously reinforce track to transfer loads.
2. Align floor and roof framing over studs. Where framing cannot be aligned, continuously reinforce track to transfer loads.
3. Anchor studs abutting structural columns or walls, including masonry walls, to supporting structure as indicated.
4. Install headers over wall openings wider than stud spacing. Locate headers above openings as indicated. Fabricate headers of compound shapes indicated or required to transfer load to supporting studs, complete with clip-angle connectors, web stiffeners, or gusset plates.

5. Frame wall openings with not less than a double stud at each jamb of frame as indicated on Shop Drawings.
6. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with clip angles or by welding, and space jack studs same as full-height wall studs.
7. Install horizontal bridging in stud system, spaced as indicated on Shop Drawings. Fasten at each stud intersection.
8. Install miscellaneous framing and connections, including supplementary framing, blocking, bracing, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.

END OF SECTION 05 40 00

Division 06 – Wood, Plastics, and Composites

SECTION 06 22 00 – MILLWORK

PART 1 - GENERAL

1.1 SCOPE:

A. Provide all of the labor, materials, equipment and services required to furnish and install the millwork.

1.2 QUALITY ASSURANCE:

A. In addition to complying with all pertinent codes and regulations, the "Quality Standards" of the Architectural Woodwork Institute shall apply and by reference are hereby made a part of these Contract Documents. Any reference to "premium", "custom", or "economy" shall be defined in the latest edition of AWI "Quality Standards".

1.3 SUBMITTALS:

A. Prior to fabrication, submit to the Architect for review the following:
   1. Shop drawings that at a minimum shall show the following:
      a. All materials (solid wood, plywood, particle board, fiberwood board, plastic laminate, solid surface, and hardware).
      b. All thicknesses and dimensions.
      c. Specie, grade and cut of woods and veneers.
      d. Jointing and bolting.
      e. The name of the manufacturer and the model number of all factory fabricated items.
      f. Full size details drawn in related and dimensioned positions to facilitate checking of intersecting and string dimensions.
      g. Clear description of work to be done in the shop and work to be done in the field.
   2. Manufacturer's literature of specialty items not manufactured by the architectural woodworker.
   3. Physical samples:
      a. Plastic laminate in all colors and patterns for the Architect's selection.
      b. Samples of each wood specie, unfinished. This shall apply to wood receiving transparent finish only, and shall be minimally 12" square in size.
      c. Exposed hardware, one unit of each type and finish.

B. Certification: Submit copies of certificate signed by woodwork shop certifying that millwork complies with quality grades and other requirements indicated. Form of certificate shall be approved by the Architect.

1.4 PRODUCT HANDLING:

A. Millwork shall not be delivered until the building and storage areas are sufficiently dry so that the millwork will not be damaged by excessive changes in moisture content.

PART 2 - PRODUCTS

2.1 STANDING AND RUNNING TRIM - INTERIOR - PAINT FINISH:

A. AWI quality grade (Section 300): Custom

B. Solid wood: Poplar, Natural Birch.

B. Panels: MDF Board with hard wood edge strips.

2.2 CASEWORK - STAIN FINISH:

A. AWI quality grade (Section 400): Custom.

B. Construction: Conform design indicated.

C. Plywood: Particleboard core, rift cut Red Oak veneer.

D. Semi-exposed parts: As governed by AWI quality grade.

2.3 CASEWORK, SHELVES AND COUNTERTOPS - PLASTIC LAMINATE FINISH:

A. AWI quality grade (Section 400): Custom.
1. Acceptable Manufacturers and finishes:
   a. PL-1 Wilsonart, FONTHILL PEAR 10745-60, Matte Finish

B. Exposed surfaces - plastic laminate: 1/16" high-pressure plastic laminate as required by AWI quality grade and conforming to NEMA Publication No. LD1-1964, Part 3 - Abrasion Class I.

C. All tops in which sinks occur shall have a core of exterior grade hardwood faced plywood. All other horizontal surfaces to be made of horizontal grade particleboard. Vertical surfaces to be made of vertical grade particleboard per AWI standards.

2.5 CASEWORK HARDWARE:

A. All cabinet hardware shall be furnished and installed by the casework manufacturer.
1. Drawer slides:
   a. Full extension slides for file drawers
   b. White Euroslides for typical drawers
   c. Manufacturers: Accuride, Mepla, Hafele, or Knape & Vogt.
2. Line boring with shelf clips.
3. Hinges: 120-degree concealed casework hinges with self-closing feature.
   a. Provide number of hinges per AWI Section 400
   b. Where wheelchair accessibility is required for base cabinets with sink, Provide 170-degree concealed casework hinges with magnetic catches.
   c. Manufacturers: Blum, Salice, Hafele or Grass.
4. Pulls: 6" brushed aluminum bar pull.
5. Locks: Cam locks where noted on drawings.
   a. All locks to be separately keyed with a master key provided.
   b. Manufacturers: National or approved equal
6. Silencers: Provide a minimum of 2 silencers for each cabinet door and drawer.

PART 3 - EXECUTION

3.1 PREPARATION FOR FINISHING:

A. Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing of concealed surfaces and similar preparations for finishing of millwork as applicable to each unit of work.

B. Refer to Division 09 “Painting” for entire finish of millwork of this Section regardless of whether shop applied or applied after installation.

C. Shop Finishing: to the greatest extent possible, finish millwork at shop or factory. Defer only final touch-up, cleaning and polishing for times after delivery and installation.

3.2 PREPARATION FOR INSTALLATION:

A. Condition millwork to average prevailing humidity conditions in installation areas prior to installing.

B. Deliver concrete inserts and similar anchoring devices to be built into substrates, well in advance of the time substrates are to be built.

C. Prior to installation of architectural woodwork, examine shop-fabricated work for completion, and complete work as required, including back priming and removal of packing.

D. Back prime all surfaces that shall be concealed after installation.

3.3 INSTALLATION:

A. Install the work plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level; and with 1/16" maximum offset in flush adjoining surfaces, 1/8" maximum offsets in revealed adjoining surfaces.

B. Scribe and cut work to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.

C. Anchor millwork to anchors or built-in blocking. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fastener heads are required, use fine finishing nails for exposed nailing, countersunk and filled flush with millwork, and matching final finish where transparent finish is indicated.

3.4 STANDING AND RUNNING TRIM:

A. Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to the greatest extent possible. Stagger joints in adjacent and related members. Cope at returns, miter at corners, and comply with referenced Quality Standards for joinery.

3.5 CASEWORK:

A. Set and secure casework in place rigid, plumb and square.

B. Use purpose designed fixture attachments for wall-mounted components. Attach wall-mounted cabinets in order that they can withstand all superimposed loading.

C. Use thread steel concealed joint fasteners to align and secure adjoining cabinet units and counter tops.

D. Permanently fix cabinet and counter bases to floor using appropriate angles and anchorages.

E. Counter-sink semi-concealed anchorage devices used to wall mount components, and conceal with solid plugs of species to match surrounding wood. Place flush with surrounding surfaces.

F. Carefully scribe cabinetwork which is against other building materials leaving gaps of 1/32" maximum. Seal gaps with sealant tinted to match adjacent surfaces. Do not use additional overlay trim for this purpose.

G. Install and adjust cabinet hardware to ensure smooth and correct operation.

3.6 ADJUSTMENT, CLEANING, FINISHING AND PROTECTION:

A. Repair damaged and defective millwork wherever possible to eliminate defects functionally and visually; where not possible to repair properly, replace millwork. Adjust joinery for uniform appearance.

B. Clean hardware, lubricate and make final adjustments for proper operation.

C. Clean millwork on exposed and semi-exposed surfaces. Touch-up shop-applied finishes to restore damaged or soiled areas.

D. Provide final protection and maintain conditions, in a manner acceptable to fabricator and installer, which ensures millwork being without damage or deterioration at time of Substantial Completion.

END OF SECTION 06 22 00

Division 07 - Thermal & Moisture Protection

SECTION 07 21 16 - BLANKET INSULATION

PART 1 - GENERAL

1.1 SCOPE:

A. Provide all of the labor, materials, equipment, and services to furnish and install the blanket insulation.

1.2 SUBMITTALS:

A. Prior to installation, submit to the Architect for review the following:
1. Manufacturer's catalog data fully describing the product and indicating installation recommendations.

1.3 QUALITY ASSURANCE

1.4 DELIVERY:

A. Deliver materials in original packages, containers, or bundles bearing manufacturer's labels. Labels shall indicate brand name and descriptive data confirming compliance with requirements herein specified.

1.5 PROTECTION:

A. Keep materials dry, protected against moisture, weather, and damage.

PART 2 - PRODUCTS

2.1 UN-FACED BATT INSULATION:

A. Mineral or fiberglass composition conforming to ASTM C665, Type I. Produce insulation by combining thermosetting resins with mineral fibers manufactured from glass, slag wool or rock wool.

B. Thickness: See Drawings.
1. 3 ½" = R-11
2. 3 ½" = R-11for sound attenuation batts

PART 3 - EXECUTION

3.1 INSTALLATION:

A. Install insulation in accordance with the manufacturer's printed instructions without gaps or voids.

B. Trim insulation to neatly and tightly fit spaces. Use batts free of damage.

C Install in the number of layers necessary to achieve the required thickness.

D. Physically and permanently attach batts to framing so as to prevent downward slippage of batt. Support relying on friction alone will not be allowed.

E. Back-fill above suspended ceiling systems:
   1. Install insulation between wire rods, perpendicular to ceiling system main tees. Batts should fit tightly together.
   2. Wire rod, chicken wire, or wire may be needed to hold insulation in place.
   3. Do not install insulation on top of, or within 3 inches of recessed light fixtures unless the fixtures are approved for such use.
   4. Refer to ceiling system manufacturer's recommendations on maximum back-loading recommendations and to ensure proper installation.

3.2 CLEAN UP:

A. When work is completed in each area, remove debris, equipment, and excess material and leave area broom clean.

END OF SECTION 07 21 16

SECTION 07 90 00 - SEALANTS

PART 1 - GENERAL

1.1 SCOPE:

A. Provide all of the labor, materials, equipment, and services required to furnish and install the sealant and caulking.

B. The purpose of caulking in this Work is to provide a positive barrier against penetration of air and moisture at joints between items where caulking is essential to continued integrity of the barrier.

1.2 SUBMITTALS:

A. Prior to installation, submit the following to the Architect for review:
   1. Complete and fully descriptive manufacturer's literature for each type of sealant used naming product formulation and giving product limitations.
   2. Date proving the product meets or exceeds the ASTM number referenced.
   3. Color chart for the Architect's selection.
   4. Submit statements by the manufacturers and installers of their acceptance of these documents and conditions and/or any modification proposed to the use of the products. Include a statement from the manufacturer that the proposed use of the product for the conditions encountered is proper.
   5. Submit a guarantee warranting all defects of material and/or application for a period of five (5) years from Date of Substantial Completion. Any failure that may occur within this warranty period, due to defective application and/or materials shall, upon written notification of such failure, be repaired or replaced with proper materials and/or labor as approved by the Architect, at no additional cost to the Owner.

1.3 DEFINITIONS:

A. The terms "Sealant" and "Caulking" shall be used interchangeably throughout the Contract Documents and shall be interpreted to mean the same material.

PART 2 - PRODUCTS

2.1 SEALANT - EXPANSION JOINTS, CONTROL JOINTS, AND PERIMETER OF DOOR AND WINDOW FRAMES:

A. Neutral Curing Silicone Sealant, conforming to ASTM C 920, Type S, Grade NS, Class 100 sealant. For use in all exterior building joints.
   1. Pecora 890/890 FTS (Field Tintable Silicone).
   2. Tremco Spectrum 1 or 2.
   3. Dow Corning 790/756 Building Sealant.
   4. Or an approved substitute.

B. Joint Backing: Backer rod as recommended by sealant manufacturer.

C. Where joint depth does not permit use of joint backing, a release paper or bond breaker shall be used.

D. On horizontal joints, surface must be cleaned and primed using primer as recommended by the sealant manufacturer.

2.2 SEALANT - SETTING THRESHOLD; FLASHING; AND GENERAL SEALING NOT OTHERWISE DELEGATED:

A. Dynatrol I
Pecora Corp.
Or an approved substitute.

B. Joint Backing: Round closed-cell polyethylene.

2.3 PRIMERS:

A. As recommended by the sealant manufacturer for use in conjunction with the sealant for application onto the various types of materials to which the sealant is applied, and complying with the requirements above. When the manufacturer's instructions make reference to use of primers and/or the construction condition requires special surface preparation, these instructions shall be complied with.

2.4 CLEANERS:

A. Where required by manufacturer's instruction in lieu of primers, shall be of the type and kind recommended by the sealant manufacturer.

PART 3 - EXECUTION

3.1 CHOICE OF CAULKING MATERIAL:

A. Use only that caulking material which is best suited to the installation and is so recommended by the caulking material manufacturer.

3.2 BACK-UP MATERIALS:

A. Verify the compatibility of filler materials with caulking before installation.

B. Use filler about 1/3 to 1/2 wider than width of joint so sufficient pressure is exerted by filler to provide substantial resistance to displacement.

C. All filler materials shall be non-oily, non-staining, back-up filler such as polyethylene foam rod, expanded polyurethane, neoprene or other filler completely compatible with the caulking material.

3.3 APPLICATION OF CAULKING:

A. Do not caulk under weather conditions or sun conditions potentially harmful to the set and curing of the caulking material.

B. Deliver materials to the job or place of application in original unopened containers bearing manufacturer's name and product designation.

C. Install caulking in strict accordance with the manufacturer's recommendations, taking care to produce beads of proper width and depth, to tool as recommended by the manufacturer, and to immediately remove all surplus caulking.

3.4 CAULKING SCHEDULE:

A. Carefully study the Drawings and furnish and install the proper caulking at each point where called for on the Drawings plus at all other points, whether specifically designated or not, where caulking is essential in maintaining the continued integrity of the intended watertight barrier.

END OF SECTION 07 90 00

Division 08 - Openings

SECTION 08 11 13 – HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
   1. Steel doors.
   2. Steel door frames.
   3. Sidelight frames
   4. Borrowed-light frames.

B. Related Sections include the following:
   1. Division 08 Section "Flush Wood Doors" for wood doors installed in steel frames.
   2. Division 08 Section "Door Hardware"
   3. Division 08 Section "Glass Glazing" for glass in glazed openings in doors and frames.
   4. Division 09 Section "Gypsum Board Assemblies" for spot-grouting frames installed in steel-framed gypsum board partitions.
   5. Division 09 Section "Painting" for field painting factory-primed doors and frames.

1.3 DEFINITIONS

A. Steel Sheet Thicknesses or gages: Thickness dimensions, including those referenced in ANSI A250.8, are minimums as defined in referenced ASTM standards for both uncoated steel sheet and the uncoated base metal of metallic-coated steel sheets.

1.4 SUBMITTALS

A. Product Data: For each type of door and frame indicated, include door designation, type, level and model, material description, core description, construction details, label compliance, sound and fire-resistance ratings.

B. Shop Drawings: Show the following:
   1. Elevations of each door design.
   2. Details of doors including vertical and horizontal edge details.
   3. Frame details for each frame type including dimensioned profiles.
   4. Details and locations of reinforcement and preparations for hardware.
   5. Details of each different wall opening condition.
   6. Details of anchorages, accessories, joints, and connections.
   7. Coordination of glazing frames and stops with glass and glazing requirements.

C. Door Schedule: Use same reference designations indicated on Drawings in preparing schedule for doors and frames.

1.5 QUALITY ASSURANCE

A. Steel Door and Frame Standard: Comply with ANSI A 250.8, unless more stringent requirements are indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished doors and frames.

B. Inspect doors and frames on delivery for damage, and notify shipper and supplier if damage is found. Minor damages may be repaired provided refinished items match new work and are acceptable to Architect. Remove and replace damaged items that cannot be repaired as directed.

C. Store doors and frames at building site under cover. Place units on minimum 4-inch- high wood blocking. Avoid using non-vented plastic or canvas shelters that could create a humidity chamber. If door packaging becomes wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doors to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Steel Doors and Frames:
a. Amweld Building Products, LLC.
b. Ceco Door Products; an ASSA ABLOY Group Company.
c. CURRIES Company; an ASSA ABLOY Group Company.
d. Steelcraft; an Ingersoll-Rand Company.
e. Fleming Door Products Ltd.; an ASSA ABLOY Group Company.
f. D&D Specialties
g. Concept Frames Incorporated

2.2 MATERIALS

A. Hot-Rolled Steel Sheets: ASTM A 569, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

B. Cold-Rolled Steel Sheets: ASTM A 366, Commercial Steel (CS), or ASTM A 620, Drawing Steel (DS), Type B; stretcher-leveled standard of flatness.

C. Metallic-Coated Steel Sheets: ASTM A 653, Commercial Steel (CS), Type B, with an A40 zinc-iron-alloy (galvannealed) coating; stretcher-leveled standard of flatness.

2.3 DOORS

A. General: Provide doors of sizes, thicknesses, gages, and designs indicated. Fabricate all doors and frames in accordance with ANSI A250.8-1998/S.D.I.-100 except where more stringent requirements are specified. Bevel lock edges 1/8 inch in 2 inches.

1. Interior Doors: Classification; 1-3/4" thick, Level 2 – Model 1, 18 gauge cold rolled, full flush of composite construction. The top and bottom of the doors shall be closed by 16 gage inverted steel channels. Top channel shall receive flush metal top cap.

2. Exterior Doors: Classification; 1-3/4" thick, Level 32 – Model 21, 16 gauge A-60 galvanized, seamless edge construction. The top and bottom of the doors shall be closed by 16 gage inverted steel channels. Top channel shall receive flush metal top cap.

B. Vision Lite Systems: Manufacturer's standard kits consisting of glass lite moldings to accommodate glass thickness and size of vision lite indicated.

2.4 FRAMES

A. General: Provide steel frames for doors, transoms, sidelights, borrowed lights, and other openings that comply with ANSI A250.8 and with details indicated for type and profile. Conceal fastenings, unless otherwise indicated.

B. Frames of 16 gage A60 metallic-coated steel sheet for:
1. Exterior steel doors.

C. Frames of 16 gage cold rolled steel sheet for:
1. Interior Steel and Wood doors.

D. Hinge reinforcements shall be 7-gage steel for hinge sizes shown. Where heavyweight hinges are scheduled, weld high-frequency hinge straps to the top and bottom of each reinforcement and frame.

E. Door Silencers: Except on weather-stripped frames, fabricate stops to receive three silencers on strike jambs of single-door frames and two silencers on heads of double-door frames.

F. Where indicated furnish Kerfed type jamb profile to accept manufacturer’s appropriate gasket for smoke seals, sound seals or weather-stripping.

G. Plaster Guards: Provide 0.016-inch- thick, steel sheet plaster guards or mortar boxes to close off interior of openings; place at back of hardware cutouts where mortar or other materials might obstruct hardware operation.

H. Supports and Anchors: Fabricated from not less than 0.042-inch- thick, electrolytic zinc-coated or metallic-coated steel sheet.
1. Wall Anchors in Masonry Construction: 0.177-inch- diameter, steel wire complying with ASTM A 510 may be used in place of steel sheet.

I. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where zinc-coated items are to be built into exterior walls, comply with ASTM A 153, Class C or D as applicable.

J. Aluminum Covered Steel Frame for use in a Fire Rated Assembly: Internal tube steel framing shall conform to ASTM A501. Formed steel retainers shall be galvanized conforming to ASTM A527. Frame covers shall be powder coated extruded aluminum alloy 6063-T5 or aluminum alloy 5052 when anodized.
1. Product: O’Keeffe’s Inc.; GlassProtex (GPX) fire rated framing system or approved substitute.

2.5 FABRICATION

A. General: Fabricate steel door and frame units to comply with ANSI A250.8 and to be rigid, neat in appearance, and free from defects including warp and buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site.

B. Clearances for Non-Fire-Rated Doors: Not more than 1/8 inch at jambs and heads, except not more than 1/4 inch between pairs of doors. Not more than 3/4 inch at bottom.

C. Single-Acting, Door-Edge Profile: Square edge, unless beveled edge is indicated.

D. Double-Acting, Door-Edge Profile: Round vertical edges with 2-1/8-inch radius.

E. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."

F. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel sheet.

G. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.

H. Thermal-Rated (Insulating) Assemblies: At exterior locations and elsewhere as shown or scheduled, provide doors fabricated as thermal-insulating door and frame assemblies and tested according to ASTM C 236 or ASTM C 976 on fully operable door assemblies. Minimum insulation value of R-10.

I. Sound-Rated (Acoustical) Assemblies: Where shown or scheduled, provide door and frame assemblies fabricated as sound-reducing type, tested according to ASTM E 1408, and classified according to ASTM E 413.

J. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements in ANSI A250.6 and ANSI A115 Series specifications for door and frame preparation for hardware.

K. Frame Construction: Fabricate frames to shape shown.
   1. Fabricate frames with mitered or coped and continuously welded corners

L. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.

M. Locate hardware as indicated on Shop Drawings or, if not indicated, according to ANSI A250.8.

N. Glazing Stops: Manufacturer's standard, formed from 0.032-inch- thick steel sheet.
   1. Provide non-removable stops on outside of exterior doors and on secure side of interior doors for glass, louvers, and other panels in doors.
   2. Provide screw-applied, removable, glazing stops on inside of glass, louvers, and other panels in doors.

2.6 FINISHES

A. Prime Finish: Manufacturer's standard, factory-applied coat of rust-inhibiting primer complying with ANSI A250.10 for acceptance criteria.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.

B. Placing Frames: Comply with provisions in SDI 105, unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.
   1. Except for frames located in existing walls or partitions, place frames before construction of enclosing walls and ceilings.
   2. In masonry construction, provide at least three wall anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Acceptable anchors include masonry wire anchors and masonry T-shaped anchors.
   3. In existing concrete or masonry construction, provide at least three completed opening anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Set frames and secure to adjacent construction with bolts and masonry anchorage devices.
   4. In metal-stud partitions, provide at least three wall anchors per jamb; install adjacent to hinge location on hinge jamb and at corresponding heights on strike jamb. Attach wall anchors to studs with screws.
   5. Install fire-rated frames according to NFPA 80.
   6. For openings 90 inches or more in height, install an additional anchor at hinge and strike jambs.

C. Door Installation: Comply with ANSI A250.8. Fit hollow-metal doors accurately in frames, within clearances specified in ANSI A250.8. Shim as necessary to comply with SDI 122 and ANSI/DHI A115.1G.
   1. Fire-Rated Doors: Install within clearances specified in NFPA 80.
   2. Smoke-Control Doors: Install to comply with NFPA 105.

3.2 ADJUSTING AND CLEANING

A. Prime-Coat Touchup: Immediately after installation, sand smooth any rusted or damaged areas of prime coat and apply touch up of compatible air-drying primer.

B. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

END OF SECTION 08 11 13

SECTION 08 14 16 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SCOPE:

A. Provide all labor, materials, equipment and services to furnish and install the flush wood doors.

1.2 QUALITY ASSURANCE:

A. Comply with the applicable requirements of the following standards unless otherwise indicated.
   1. ANSI/WDMA I.S. 1-78, "Industry Standard for Wood Flush Doors".
   2. UL10-C fire test for mineral core fire doors.
   3. Provide doors with fire-resistance ratings indicated or required to comply with governing regulations.
   4. All labeled doors shall be manufactured in accordance with the specifications procedures of the Underwriter's Laboratories. All labeled doors shall physically bear the U.L. label showing the rating required.

1.3 SUBMITTALS:

A. Prior to fabrication, submit the following to the Architect for review:
   1. Complete and fully descriptive manufacturer's literature.
   2. Shop drawings: Sizes, face veneer, edge construction, core construction, necessary details, and factory finishing.
   3. Door schedule: Show door sizes, opening numbers or designations and elevations, door type, fire classification marking, swing, light and louver cutout sizes and locations, and undercut.
   4. Physical sample: Cross section at door corner.
   5. Certification: Submit written certification signed by an officer of the manufacturing firm that shall certify that the materials delivered to this work comply in all respects with the requirements of the Contract Documents.

1.4 GUARANTEE:

A. Submit written guarantee for use for the life of the installation, including repair and/or replacement, and refinishing of defective material in accordance with the standard door guarantee of the National Woodwork Manufacturer's Association.

1.5 PRODUCT HANDLING:

A. Package each door at the factory in separate heavy paper-type carton or poly bag. Mark each carton or door for location to correspond with opening number on Drawings.

PART 2 – PRODUCTS

2.1 INTERIOR DOORS - SOLID CORE - FOR STAIN FINISH:

A. WDMA Premium Grade 5-Ply Hot Press Construction

B. Species and Cut:
1. Rotary cut White Birch, Book match and balance match – Factory finish where clear or stained finish is called for.

C. Core construction:
1. Non-rated: Structural Composite Lumber SCL
2. Rated: Mineral - 45 minute or greater. Furnish Category “A” imbedded intumescent insert.
3. Provide 5" inner blocking at top rail of mineral core doors.
4. Provide inner blocking for locks and panics at mineral core doors.
5. Provide bonded core assembly.

D. Subject to compliance of all specifications in this section.
Acceptable manufacturers are:
1. Marshfield Doors
2. Substitutes as approved by Architect.

E. Factory Finish: Manufacturer's standard finish with performance comparable to AWI System TR-6 catalyzed polyurethane.

Staining: Must match “Basis of Design Color” as listed on sheet A701, Finish Legend. Designer/Owner approval required. This is a critical aesthetic match.

F. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain urea formaldehyde.

2.2 LIGHTS AND LOUVERS:

A. Provide openings with stops for lights and louvers.

B. Provide the manufacturer's standard wood louvers if indicated.

2.3 PRE-FITTING AND PRE-MACHINING:

A. Pre-fit doors at the factory in accordance with tolerance requirements of the WDMA standards with allowances for undercuts (if any). Provide standard bevel or radius to edge of door as required for the installation.

B. Machine doors for butts, locksets, concealed closers, concealed holders, concealed exit hardware and flush bolts. Machine in accordance with templates of approved hardware manufacturer.

PART 3 - EXECUTION

3.1 INSPECTION:

A. Examine door frames and verify that frames are correct type and have been installed as required for proper hanging of corresponding doors. Correct any conditions that will be detrimental to proper and timely installation of wood doors. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION:

A. Condition doors to average prevailing humidity in installation area prior to hanging.

B. Hardware: See Section 08 71 00, "Door Hardware".

C. Install wood doors in accordance with manufacturer's instructions and as shown.

D. Pre-fit doors: Fit to frames and machine for hardware to whatever extent not previously worked at factory as required for proper fit and uniform clearance at each edge.

E. Clearance:
1. Non-rated doors: Provide clearances of 1/8" at jambs and heads; 1/8" at meeting stiles for pairs of doors; and ½" from bottom of door to top of finish floor material or covering. At thresholds, provide 1/4" clearance from bottom of door to top of threshold.
2. Fire-rated doors: Provide clearances complying with NFPA.

3.3 ADJUST AND CLEAN:

A. Re-hang or replace doors which do not swing or operate freely.

B. Refinish or replace doors damaged during installation.

END OF SECTION 08 14 16

SECTION 08 41 13 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Exterior and interior aluminum-framed storefronts.
      a. Glazing is retained mechanically with gaskets on four sides.
   2. Exterior and interior manual-swing aluminum doors.
   3. Exterior and interior aluminum door frames.

1.2 PERFORMANCE REQUIREMENTS

A. General: Provide aluminum-framed systems, including anchorage, capable of withstanding, without failure, the effects of the following:
   1. Structural loads.
   2. Thermal movements.
   3. Movements of supporting structure indicated on Drawings including, but not limited to, story drift and deflection from uniformly distributed and concentrated live loads.
   4. Dimensional tolerances of building frame and other adjacent construction.
   5. Failure includes the following:
      a. Deflection exceeding specified limits.
      b. Thermal stresses transferred to building structure.
      c. Framing members transferring stresses, including those caused by thermal and structural movements, to glazing.
      d. Noise or vibration created by wind and thermal and structural movements.
      e. Loosening or weakening of fasteners, attachments, and other components.
      f. Sealant failure.
      g. Failure of operating units to function properly.

B. Structural Loads:
   1. Wind Loads: As indicated on Drawings or if not as required by local code.
   2. Seismic Loads: As indicated on Drawings or if not as required by local code.

C. Deflection of Framing Members Normal to Wall Plane: Limited to 1/175 of clear span for spans up to 13 feet 6 inches and to 1/240 of clear span plus 1/4 inch for spans greater than 13 feet 6 inches or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.

D. Structural-Test Performance: Systems tested according to ASTM E 330 as follows:
   1. When tested at positive and negative wind-load design pressures, systems do not evidence deflection exceeding specified limits.
   2. When tested at 150 percent of positive and negative wind-load design pressures, systems, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.2 percent of span.
   3. Test Durations: As required by design wind velocity but not less than 10 seconds.

E. Temperature Change (Range): Systems accommodate 120 deg F, ambient; 180 deg F, material surfaces.

F. Air Infiltration: Maximum air leakage through fixed glazing and framing areas of systems of 0.06 cfm/sq. ft. of fixed wall area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 6.24 lbf/sq. ft..

G. Water Penetration Under Static Pressure: Systems do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft..

H. Condensation Resistance: Fixed glazing and framing areas of systems have condensation-resistance factor (CRF) of not less than 59 when tested according to AAMA 1503.

I. Average Thermal Conductance: Fixed glazing and framing areas of systems have average U-factor of not more than 0.43 Btu/sq. ft. x h x deg F when tested with glasss that has a center U-factor of .28 Btu/sq. ft. x h x deg F with a 78 ¾”X78 ¾” gateway size according to AAMA 1503. Entrance Doors shall have an average U-factor of not more than 0.77 Btu/sq. ft. x h x deg F when tested according to AAMA 1503.

1.3 SUBMITTALS

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

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
1. Include structural analysis data.
2. For entrances, include hardware schedule and indicate operating hardware types, functions, quantities, and locations.

C. Samples: For each exposed finish.

D. Product test reports.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Acceptable to manufacturer and capable of preparation of data for aluminum-framed systems including Shop Drawings based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

1.5 WARRANTY

A. Special Assembly Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that deteriorate as defined in this Section within specified warranty period.
1. Failures include, but are not limited to, the following:
a. Structural failures including, but not limited to, excessive deflection.
b. Noise or vibration caused by thermal movements.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
d. Water leakage through fixed glazing and framing areas.
e. Failure of operating components to function properly.
2. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: The design for aluminum-framed systems is based on EFCO Series 403-I (Thermally Broken). Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
   1. Kawneer .
   2. United States Aluminum.
   3. Vistawall Architectural Products.
   4. YKK AP America Inc.

2.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
   1. Sheet and Plate: ASTM B 209.
   2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
   3. Extruded Structural Pipe and Tubes: ASTM B 429.
   4. Structural Profiles: ASTM B 308/B 308M.

B. Steel Reinforcement if required to meet wind load requirements: With manufacturer's standard corrosion-resistant primer.
   1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
   2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
   3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

2.3 FRAMING SYSTEMS

A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
   1. Construction: Framing members are composite assemblies of two separate extruded-aluminum components permanently bonded by an elastomeric material of low thermal conductance.

B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

C. Fasteners and Accessories: Manufacturer's standard **FULLY CONCEALED** corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.
   1. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
   2. Reinforce members as required to receive fastener threads.

D. Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials. Form exposed flashing from sheet aluminum finished to match framing and of sufficient thickness to maintain a flat appearance without visible deflection. Sill pan flashing shall be fabricated with end dams at sill/jamb intersections.

E. Framing System Gaskets and Sealants: Manufacturer's standard recommended by manufacturer for joint type.

2.4 GLAZING SYSTEMS

A. Glazing: As specified in Division 08 Section "Glass Glazing."

B. Glazing Gaskets: Manufacturer's standard compression types, replaceable, molded or extruded, that maintain uniform pressure and watertight seal.

C. Spacers and Setting Blocks: Manufacturer's standard elastomeric types.

2.5 DOORS

A. Doors: Manufacturer's standard glazed doors, for manual swing operation.
1. Door Construction: 2-inch overall thickness, with minimum 0.125-inch- thick, thermally broken, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deep penetration and fillet welded or that incorporate concealed tie rods.
2. Door Design: Wide stile; 5-inch nominal width, minimum. Exterior doors to have insulated tinted tempered glass to match storefront glazing unless otherwise noted. Interior doors to have ¼" clear tempered glazing unless otherwise noted.
a. Accessible Doors: Smooth surface for width of door in area within 10 inches above floor or ground plane.

2.6 DOOR HARDWARE

A. General: Provide heavy-duty units in sizes and types recommended by entrance system and hardware manufacturers for entrances and uses indicated.

B. Scheduled Door Hardware: Shall be as specified in Division 08 Section "Door Hardware".

2.7 ACCESSORY MATERIALS

A. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Division 07 Section "Sealants."

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

2.8 FABRICATION

A. Form aluminum shapes before finishing.

B. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Means to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.
4. Physical and thermal isolation of glazing from framing members.
5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
6. Provisions for field replacement of glazing from exterior.
7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

C. Mechanically Glazed Framing Members: Fabricate for flush glazing (without projecting stops).

D. Door Frames: Reinforce as required to support loads imposed by door operation and for installing hardware.

1. At exterior and interior doors, provide compression weather stripping at fixed stops.

E. Doors: Reinforce doors as required for installing hardware.
1. At pairs of exterior doors, provide sliding weather stripping retained in adjustable strip mortised into door edge.
2. At exterior doors, provide weather sweeps applied to door bottoms.

F. Hardware Installation: Factory install hardware to the greatest extent possible. Cut, drill, and tap for factory-installed hardware before applying finishes.

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

2.9 ALUMINUM FINISHES

A. High-Performance Organic Finish: Two -coat thermocured system with fluoropolymer topcoats containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.
1. Color and Gloss: As selected by Architect from manufacturer's full range (minimum of 30 colors).

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:
1. Fit joints to produce hairline joints free of burrs and distortion.
2. Rigidly secure nonmovement joints.
3. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
4. Seal joints watertight, unless otherwise indicated.

B. Metal Protection:
1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape or installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

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

D. Set continuous sill members and flashing in continuous sealant per manufacturer’s recommendations and as specified in Division 07 Section "Sealants" and to produce weathertight installation.

E. Install components plumb and true in alignment with established lines and grades, without warp or rack.

F. Entrances: Install to produce smooth operation and tight fit at contact points.
1. Exterior Entrances: Install to produce tight fit at weather stripping and weathertight closure.
2. Field-Installed Hardware: Install surface-mounted hardware according to hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

G. Install perimeter joint sealants as specified in Division 07 Section "Sealants" and to produce weathertight installation.

H. Erection Tolerances: Install aluminum-framed systems to comply with the following maximum tolerances:
   1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet; 1/4 inch over total length.
   2. Alignment:
      a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch.
      b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch.
   3. Diagonal Measurements: Limit difference between diagonal measurement to 1/8 inch.

END OF SECTION 08 41 13

SECTION 08 56 19 ALUMINUM PASS THROUGH WINDOW

PART 1 – GENERAL

1.1 SUMMARY

A. This section includes:
   1. Aluminum pass through windows as indicated in drawings and in sections.

1.2 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.

1.3 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.

1.4 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.

1.5 WARRANTY

All material and workmanship shall be warranted against defects for a period of one (1) year from the original date of purchase.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURER'S

A. Basis of design: Design is based on Aluminum pass thorugh Window, catalog number **SCW103N,** manufactured by **C.R. Laurence Co., Inc. (800) 421-6144**
B. Or Equivalent.

2.2 MATERIALS

A. Frames: Aluminum cashier window frame to be 1.390" x .625" extruded aluminum. Overall frame size to be 30" W x 32"H (Includes 2" H stainless steel shelf.)
B. Finish: All aluminum to be clear anodized.
Glazing: ¼" Clear tempered Glass.
C. Shelf: Provide a shelf not less than 2" thick with recessed deal tray. The shelf is to be the full width of the window and 18" deep centered under the glazing.

D. Voice Transmission: Communication permitted by 834A no draft speak-thru centered in glazing.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install frames and glazing 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.

3.2 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.

3.3 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 08 56 19

SECTION 08 71 00 - DOOR HARDWARE

GENERAL

1.1 DESCRIPTION OF WORK

A. Work Included This Section:
1. Work of this Section shall include all labor, materials, equipment, transportation, tools and storage required for complete installation of all finish hardware, shown and scheduled on Drawings and specified herein.
2. It is the intent of this Specification to provide complete finishing hardware requirements for the entire building project excepting hardware, which is specifically mentioned as furnished by others.

B. Work Not Included:
1. Hardware for:
a) Toilet Partitions and Doors.
b) Millwork and Cabinets.

C. Related Work Specified Elsewhere:
1. Hollow Metal Doors and Frames (08 11 13)
2. Flush Wood Doors (08 14 16)
3. Aluminum-Framed Entrances and Storefronts (08 41 13)

1.2 QUALITY ASSURANCE

A. The Hardware Supplier shall be one having in his regular employ, an AHC (Architectural Hardware Consultant) who is, through experience, capable of supervising the furnishing and installation of the hardware requirements contained herein.

1. The consultant shall be available for technical assistance on the site that may be required in connection with hardware installation.

B. The Hardware Supplier, if required, shall provide information to the Architect, documentation that he has the experience and knowledge to furnish the proper hardware for this work and that he has a record of completing similar projects on time and to the satisfaction of the Owner and Architect.

C. Service:
1. The project shall be visited by a representative of the hardware supplier during the course of construction. One time shall be after all hardware is applied.
2. The supplier must write a letter to the Architect after this visit and state his findings.

D. Codes and Regulations:
1. All hardware listed or furnished shall meet requirements of Federal, State and Local Codes (including ADA) have jurisdiction over this installation.

E. Any item furnished or installed that does not meet code requirements as specified, shall be removed and proper items substituted at no additional cost or expense to the Owner. All hardware furnished in connection with doors bearing Labels or where necessary to meet special requirements, such as handicapped codes, will be in strict accordance with conditions established by the authority having jurisdiction and subject to approval of that authority as specified herein.

1.3 SUBMITTALS

A. Hardware Schedule:
1. A detailed hardware schedule (wet sealed by an AHC) shall be prepared showing doors and indicating the type of swing, key side, room to and from, the degrees of swing, the type of door buck, any special hardware locations, and a list of the hardware and manufacturers of each item.
2. This schedule shall also show the recommended keying arrangement, which shall be submitted through the General Contractor to the owner for approval.
3. Schedule shall include a consecutive listing of doors (numbered in sequence as shown on the Architectural Drawings) showing hardware for each door.
4. Hardware containing electronics, including automatic hardware, shall have complete, point to point wiring diagrams of each opening indicating wire sizes for special hardware for each hardware set required and final responsibility of all connections.
5. The hardware supplier shall submit for approval, six (6) copies of the complete hardware. No hardware shall be delivered until the Contractor and Architect have approved the hardware schedule.
6. The hardware supplier shall submit along with the Finish Hardware Schedule, catalogue cuts of all items submitted as well as catalogue cuts of the specified items.
   a) If ANSI products or generic items are specified, the scheduled items will be cross-referenced.
   b) Provide samples when requested.
7. Provide detailed riser diagrams of all electrically actuated hardware including proper interfacing with any automatic door operators.

B. Samples:
1. Provide samples at no cost of hardware when requested.

C. Templates:
1. Immediately after the award of the hardware contract, the hardware supplier shall request approved shop drawings from those trades with which hardware must be coordinated.
2. After checking shop drawings, he shall promptly supply necessary template information to all concerned as may be required to facilitate the progress of the job.
3. All procedures for template information shall be in accordance with the DHI Handbook, "Recommended Procedure for Processing Hardware Schedules and Templates".

E. A shop drawing coordination meeting shall be held before door, door frame, and door hardware shop drawings are submitted. The purpose of this meeting will be to coordinate doors, frames, door hardware, and electrical rough-ins. The Contractor shall notify the owner, designer, and affected subcontractors, and schedule the meeting. The electrical contractor shall prepare conduit and box rough-in drawings for each door/frame requiring electronic systems or other wiring and bring these drawings to the coordination meeting.

The affected trades shall coordinate wiring, rough-ins, door opening construction, door frame and door hardware installation prior to the submission of door shop drawings or electrical rough-in.

F. Keying Schedule: Prepared by or under the supervision of supplier, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations. Include a bitting schedule at the conclusion of the project. Keysets to be keyed to existing doors elsewhere on campus as coordinated with Owner.

G. Keying Meeting: Contractor to arrange a mandatory keying meeting prior to approval of the door hardware submittal. Meeting to include the General Contractor, Owner, Door Hardware suppliers and installers.

1.4 PRODUCT HANDLING

A. Template Requirements:
1. Supply all templates and template information to other manufacturers whose work is affected by the work of this section.
2. Hardware for use with hollow metal doors and frames and aluminum doors and frames shall be furnished to template.
3. Attachment shall be with machine screws or through bolts when required.
4. Hardware Supplier shall furnish templates to the wood door manufacturer for pre-fitting and pre-machining of the doors as specified.

B. Delivery and Packaging:
1. Deliver items of hardware in one shipment, or as required by General Contractor, direct from supplier warehouse to the jobsite along with packing list showing where each piece of hardware can be found.
2. Package each item of hardware separately in individual containers complete with screws, instructions, and installation templates.
3. Identify each container with number of door to which hardware item is to be applied.
   a) Items such as hinges (except special types), door stops, weather stripping, silencers, and standard size kick plates will not require "door number" identification.

1.5 APPLICABLE PUBLICATIONS

A. The following current publications form a part of this specification to the extent indicated by any references thereto.
1. American National Standards Institute (ANSI) Standards (Relating to Finish Hardware)
2. Builders' Hardware Manufacturers Association (BHMA) Standards
3. Door & Hardware Institute - "Hardware for Buildings" Handbooks
4. National Fire Protection Association (NFPA) Publications
   a) 70 – latest edition National Electric Code
   b) 80 - latest edition Standard for Fire Doors and Windows
   c) 101- latest edition Code for Safety to Life from Fire in Buildings and Structures

B. Fire Rated Doors and Frames:
1. Where emergency exit devices are required on fire rated doors, provide UL or WHI label on exit devices indicating “Fire Exit Hardware”.
2. Install closing (self-closing or automatic closing) device on every fire door bearing fire labels.

C. Underwriters' Laboratories, Inc. (UL), Factory Mutual, Warnork Hersey or other nationally recognized testing laboratories.

D. North Carolina Building Code with latest edition.

1.6 STORAGE

A. Contractor shall furnish a secure locked dry storage area for delivery by Hardware Supplier of finish hardware and storage of same. Contractor shall be responsible for shortages due to theft, pilferage, etc.

B. Provide storage space with necessary open shelves, bins, and counters for assembly and grouping hardware before distribution and installation. Specialty items such as door closers, exit devices, overhead holders, locksets, etc. shall not be opened until ready to use.

C. See paragraph on keying. Store keys in indexing key envelopes as furnished by Key Control Manufacturer. Mark envelopes carefully to prevent misplacement. Turn envelopes over to Key Control Manager as required.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Provide one complete Hardware set #49 as described per the hardware schedule.

B. This material shall not be available to the contractor for replacement goods within the building warranty period.

1.8 MAINTENANCE

A. Maintenance Control:
   1. Furnish maintenance repair kits and manuals as required for all hardware listed in the Contract Documents. These materials shall be sent directly to the Owner by registered mail.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Materials specified and shown in the hardware schedule are the type, design and quality required.

B. Reinforcement:
   1. Reinforcing of proper gauge, size and attachment as recommended by the Manufacturer for hardware shall be furnished and installed by the Door and Frame Manufacturer.

C. Modifications:

1. Modifications shall not be made to hardware except with the approval of the supplier and/or manufacturer.

D. Manufacturer:
1. Following items within each classification shall be furnished totally by one manufacturer unless schedule indicates otherwise. Acceptable products as noted.
   a) Hinges - Hager, McKinney, PBB.
   b) Exit Devices – Corbin Russwin, Yale, Detex.
   c) Locksets – Corbin Russwin, Yale, Sargent.
   d) Closers – Corbin Russwin, Norton, Yale.

E. Lock and Latch Set:
1. All locksets (and latchsets) must conform to ANSI A156.13, Grade 1, as specified under the hardware sets and be UL listed. All lock and latch sets must be through-bolted. All locksets and latchsets must have a three-year warranty.
   a) Subject to established performance and warranty requirements, acceptable Lock/ Latch Manufacturers are:
      1) Corbin Russwin ML2200 – LWA Design
      2) Yale 8700FL – CRR Design
      3) Sargent.8200 – LNJ Design

F. Keying:
1 Keying and cylinder type to be H 1 7 Pin. Keys marked with quick code "VKCO". Temporary ICC cylinders shall be supplied during the construction period on all exit device trims. Permanent ICC cylinders installed by the Hardware supplier at the time of CMK removal.
2 After installation of hardware and before acceptance of the building, hardware supplier shall check each locked door against key symbol to make certain that correct locks and cylinders are on proper doors.

G. Manufacturer:
1. Following items within each classification shall be furnished totally by one manufacturer unless schedule indicates otherwise:
   a) Hinges
   b) Exit Devices
   c) Locksets
   d) Closers
   f) Protection Plates

H. Fasteners:
1. Use concealed fasteners whenever possible.
2. Hardware to be installed on metal work shall be furnished with Phillips head machine screws.
3. For exposed fasteners on interior in bronze or brass, use matching color and material for fasteners. For all other exposed fasteners on interior, use stainless steel except where noted specifically otherwise.
4. Furnish stainless steel screws for all exterior work.

I. Finishes:
1. Finishes shall be as follows unless the schedule dictates otherwise:
   a) All exterior door butts shall be 630

b) All interior door butts at wood doors shall be 652 or 630 as specified
c) All interior door butts at metal doors shall be 630
d) Locksets and exit bolts trim shall be 630
e) Door closers shall have sprayed lacquer finish to match adjacent hardware or shall be plated as scheduled.
f) Door pulls shall be 630
g) Push plates shall be 630
h) Kick plates and mop plates shall be 630
i) Armor plates shall be 630
j) Thresholds and weatherstripping shall be 628.
k) Stops, holders, miscellaneous items shall be 626 or 630
l) Hardware for aluminum doors shall be as specified in that section.

2.2 HARDWARE ITEMS

A. Butt Hinges:
1. In general, provide 1-1/2 pair per door of average height. For doors under 5', one pair will suffice. Doors over 90" in height shall have (2) two pair. Dutch doors shall have a minimum of two pair.
2. All hinges shall be 5 knuckle and have flat button tips unless specified otherwise.
3. Hinge size shall be 4-1/2 x 4-1/2, .134 gauge for all doors up to and including 36" wide. Doors over 37" wide and less than 42" shall have 5" x 4-1/2" .146 gauge scheduled. Doors 42" and over shall have 5" x 4-1/2" 4 ball bearing hinge .190 gauge.
4. Hinges shall be full mortise type. Hinges for labeled doors shall meet requirements for that rating.
5. Exterior outswinging doors shall have 4 bearing .190 gauge hinges sized as paragraph 3 above in brass, bronze, or stainless steel. Stainless shall be scheduled unless finish dictates otherwise.
6. Interior doors shall have steel hinges scheduled.
7. Provide ball bearing hinges on all doors with closers, all metal doors, and on doors over 37" wide and all high frequency openings. Other doors shall be plain bearing.
8. Provide hinges with non-removable pins and/or security studs for all outswing exterior doors and high security interior controlled doors.
9. Half-surface through-bolted hinges shall be provided at "B" label 1 and 1-1/2 hour rated wood doors unless manufacturer guarantees full mortise installation because of special reinforcing provisions.
14. Manufacturer shall be PBB, Hager, McKinney, or Stanley.

H. Exit Devices:
1. All devices shall be UL approved for all types and functions indicated in the Hardware Set.
2. Where exit devices are used in a door where the device spans across a view light in the door, the device shall be equipped with a glazing frame kit.
3. Push pad exit devices shall be patterned punched to designate code requirements where required.
4. Panic Hardware to match existing hardware located elsewhere on the campus. Coordinate with Owner.
5. Approved Manufacturers are as follows:
    a) Corbin Russwin ED5000/ED4000
    b) Yale 7100/7200
    c) Von Duprin 99 Series

I. Door Closers:
1. All door closers shall be stalled on the inside of the building and inside of the rooms. The following series products are approved: Norton 7500 Series, Corbin Russwin DC2200, Yale 4400 Series, LCN.
2. All closer arms shall be of type required to provide maximum permissible swing of door.
   a) Size scheduled shall be as required by manufacturer's size chart.
   b) Closers shall be mounted parallel arm wherever closer may strike a wall or arm project into a corridor.
3. Provide closers that are both handed and multi-sized.
4. The Contractor shall provide initial settings for operating force and opening range to meet the standards of ADA guidelines.
5. Mounting door closers inside rooms.
   a) Size requirements shall conform to the manufacturer's published recommendation and shall be shown on hardware schedule.
6. Closers shall have a minimum 10-year warranty and be UL listed for functions shown in Hardware Sets.

J. Door Stops:
1. Door stops shall be installed wherever an open door or any item of hardware thereon strikes a wall or other part of building construction.
   a) McKinney wall stop WS01 shall be used.
2. All wall stops shall be installed with proper blocking within the wall.
3. Products of equal design, finish, and functions as manufactured by Baldwin, Trimco, or Hager will be considered equal.
4. Where wall conditions exclude the use of a wall stop use a floor stop Trimco 1211 or approved equal.

K. Door Silencers:
1. Provide 1/2" diameter rubber pneumatic type silencers, (minimum 3 per single door and 2 per opening for pair) McKinney S1M (Grey) or equal. Products of equal design, finish, and functions as manufactured by Baldwin, Ives, Rockwood, Quality, or Trimco will be considered equal.

L. Door Pulls and Push Plates:
1. The standard pull shall be as manufactured by McKinney or equal.
2. Any special pulls shall be scheduled.
3. Push plates shall be .050 thick.
   a) If stiles of doors will not permit, a smaller size shall be used to suit conditions.
4. Plates shall be beveled 4 sides.
5. Products of equal design, finish, and functions as manufactured by Baldwin, Trimco, Rockwood, Quality, Burns, or Hager will be acceptable.

M. Protection Plates:
1. Protection plates shall be.050 gauge metal.
2. Plates shall be beveled 4 sides and attached by countersunk sheet metal oval screws and in the sizes indicated below:
   a) Kick plates shall be 8" high
   b) Mop plates shall be 4” high
   c) Armor plates shall be 42" high.

d) Width shall be 2" LDW for single doors on push side. 1" LDW on pull side and at pairs of doors.
e) Products of equal metal design, finish, and functions as manufactured by Baldwin, Hager Rockwood, , Burns, or Trimco will be acceptable.
d) Mounting of metal shall be with screws.

N. Dust Boxes:
1. Dust boxes shall be installed with all jambs.
2. All flush bolts unless locked into a threshold shall be provided with a dust proof strike equal to H. B. Ives 489.

O. Rain Drip:
1. When exterior doors are not protected by building roof and conditions dictate, provide rain drip equal to Zero #142 4" wider than door size.
2. Products of equal design, finish, and function manufactured by Reese, National Guard and Pemko will be considered equal.

P. Thresholds:
1. All exterior doors shall be aluminum as manufactured by McKinney.
2. Products of equal design, finish, and function manufactured by Reese, Trimco, Zero International and Pemko will be considered equal.
3. Provide carpet divider fire stop thresholds at all rated doors where carpet extends through the door opening.
4. Divider strip shall be National Guard Products No. 414 or 414-DKB (verify with Architect) or equal.

Q. Weatherstrip:
1. All exterior doors shall be equipped with Zero 8878 seal or equal. Products of equal design, finish, and function manufactured by Reese, McKinney and Pemko will be considered equal.

PART 3 – EXECUTION

3.1 GENERAL

A. Consult project drawings and details and otherwise become familiar with work so that all items furnished will conform to openings to which applied. Proper labeled Hardware will be supplied and all handicapped codes and other codes will be properly met.

B. Coordinate hardware with other allied trades such as carpentry, millwork, metal frames, etc.

3.2 INSTALLATION

A. All hardware shall be installed in accordance with manufacturer's instructions.
1. Except as indicated or specified otherwise, fasteners furnished with the hardware shall be used to fasten hardware in place.
2. Fasten hardware to wood surfaces with full-threaded wood screws or sheet metal screws with proper finished head as supplied by the manufacturer of the hardware.
3. Use:

a) Machine screws set in expansion shields for fastening hardware to solid concrete and masonry surfaces.
b) Toggle bolts where required for fastening to hollow core construction.
c) Sex nuts and bolts for mounting closers and pulls, and labeled hardware where necessary for satisfactory installation.

B. All painting of doors shall be done prior to installation of hardware.

C. After installation, protect hardware from paint, stains, blemishes and other damage until acceptance of the work.

D. Mount hardware units at heights recommended in "Recommended Locations for Builder's Hardware" by DHI except as otherwise specifically indicated or required to comply with local code or government regulations. The Architect may direct otherwise.

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

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

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

F. Screw thresholds to substrate with No. 10 or larger screws and anchors of the proper type for permanent anchorage and of bronze or stainless steel which will not corrode in contact with the threshold metal. On heavy-duty cast metal thresholds, provide not less than 3/8" diameter screw anchors.

G. At exterior doors, and elsewhere as indicated, set thresholds in a bed of either butyl rubber sealant or polyisobutylene mastic sealant to completely fill concealed voids and exclude moisture from every source. Do not plug drainage holes or block weeps. Remove excess sealant.

3.3 ADJUSTMENT AND CLEANING:

A. It shall be the Contractor's responsibility to adjust and check each operating item of hardware and each door, to insure proper operation of function of every unit.
1. Lubricate moving parts with type lubrication recommended by manufacturer.
a) Graphite type if no other recommended.
b) Replace units which cannot be adjusted and lubricate to operate freely and smoothly as intended for the application made.

B. 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.

C. Clean and relubricate operating items as necessary to restore proper function and finish of hardware and doors.

D. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
   1. Instruct Owner's personnel in proper adjustment and maintenance of hardware finishes, during the final adjustment of hardware.

3.4 CONTINUED MAINTENANCE SERVICE

A. Approximately six months after the acceptance of hardware in each area, the Installer, accompanied by the Contractor and the Hardware Supplier shall return to the project and re-adjust every item of hardware to restore proper function of doors and hardware.

B. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures.

C. Clean and lubricate operational items wherever required.

D. Replace hardware items which have deteriorated or failed due to faulty design, materials or installation of hardware units.

E. Provide Architect with a written report upon completion of the above.

3.5 COMPLETION

A. Inspection of Hardware and Installation:
   1. The hardware supplier shall visit the Project when the hardware is delivered and check it before it is installed.
   2. He shall visit the Project again after all the hardware has been installed and shall notify the Architect in writing, that all hardware is functioning properly and has been installed or adjusted correctly.
   3. The contractor shall turn over to the Owner, in book form, after completion of the Work, at least one copy of every installation instruction sheet and parts list, all tools, wrenches and templates, that come packaged with the hardware, for the Owner's use in servicing the hardware.

3.6. HARDWARE SCHEDULE

A. See attached schedule

END OF SECTION 08 71 00

HARDWARE SCHEDULE

HW SET # 1.0
Doors: 100
Each to have:

1	Continuous Hinge	FM-100	628	MR
1	Rim Exit Device	ED4200 K157	630	RU
1	Cylinder	AS REQUIRED	626	RU
1	Door Pull	RM201 MTG 12XHD	US32D	RO
1	Door Closer	DC6210 A11	689	RU
1	Threshold	171A		PE
1	Set Weatherstrip	FURNISHED BY DOOR MANUFACTURER		

HW SET # 2.0
Doors: 102
Each to have:

1	Continuous Hinge	FM-100	628	MR
1	Rim Exit Device	ED4200 K157	630	RU
1	Cylinder	AS REQUIRED	626	RU
1	Door Pull	RM201 MTG 12XHD	US32D	RO
1	Door Closer	DC6210 A11	689	RU

NOTE: CARD ACCESS TO BE FURNISHED AND INSTALLED BY OWNER.

HW SET # 3.0
Doors: 101
Each to have:

	Hinge	TA2714	US26D	MK
1	Entrance Lock	ML2053 LC x MATCH EXISTING LEVER	630	RU
1	Cylinder	AS REQUIRED	626	00
1	Wall Stop	406	US32D	RO
3	Silencer	608		RO

MANUFACTURER'S ABBREVIATIONS:
1. MK - McKinney
2. MR - Markar
3. RO - Rockwood
4. RU - Corbin Russwin
5. PE - Pemko
6. 00 - Other

END OF SECTION 080671

SECTION 08 81 00 – GLASS GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes glazing for the following products and applications:
   1. Windows. – See Window Specifications for Pre-manufactured wood, clad or aluminum window glazing types.
   2. Doors.
   3. Glazed entrances.
   4. Interior borrowed lites.
   5. Aluminum-framed entrances and storefronts.

1.2 PERFORMANCE REQUIREMENTS

A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Glass Design: Glass thicknesses indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites for various size openings in nominal thicknesses indicated, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:
   1. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:
      a. Specified Design Wind Loads: As indicated on drawings or if not indicated as required by local code.
      b. Probability of Breakage for Vertical Glazing: 8 lites per 1000 for lites set vertically or not more than 15 degrees off vertical and under wind action.
         1) Load Duration: 60 seconds or less.
      c. Minimum Glass Thickness for Exterior Lites: Not less than 6 mm (1/4”).
      d. Thickness of Tinted and Heat-Absorbing Glass: Provide the same thickness for each tint color indicated throughout Project.

C. Thermal Movements: Provide glazing that allows for thermal movements resulting from a maximum change (range) of 120 deg F, 180 deg F in ambient and surface temperatures, respectively, acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

D. Thermal and Optical Performance Properties: Provide glass with performance properties specified based on manufacturer's published test data, as determined according to procedures indicated below:
   1. For monolithic-glass lites, properties are based on units with lites 6 mm thick.
   2. For laminated-glass lites, properties are based on products of construction indicated.

   3. For insulating-glass units, properties are based on units with lites 6 mm (1/4”) thick and a nominal 1/2-inch- wide interspace.

4. Center-of-Glass U-Values: NFRC 100 methodology using LBL-35298 WINDOW 4.1 computer program, expressed as Btu/ sq. ft. x h x deg F.
5. Center-of-Glass Solar Heat Gain Coefficient: NFRC 200 methodology using LBL-35298 WINDOW 4.1 computer program.
6. Solar Optical Properties: NFRC 300.

1.3 SUBMITTALS

A. Product Data: For each glass product and glazing material indicated.

B. Samples: 12-inch- square, for each type of glass product indicated, other than monolithic clear float glass.

C. Glazing Schedule: List glazing types and locations.

D. Sealant compatibility and adhesion test reports.

1.4 QUALITY ASSURANCE

A. Sealant Compatibility and Adhesion Testing: Use sealant manufacturer's standard test methods to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.

B. Fire-Rated Assemblies: Where glazing products are used in fire-rated assemblies, comply with requirements of specific assembly specified in other sections of these Specifications.

1. Door Assemblies: Complying with NFPA 80 and listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.
2. Window Assemblies: Complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 257.

C. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201 and ANSI Z97.1.

D. Burglary Resisting Glazing Material: Comply with the requirements of UL972 - Standard for Burglary Resisting Glazing Material

E. Glazing Publications: Comply with recommendations of the following, unless more stringent requirements are indicated.
1. GANA Publications: "Glazing Manual" and "Laminated Glass Design Guide."
2. SIGMA Publications: SIGMA TM-3000, "Vertical Glazing Guidelines."

F. Insulating-Glass Certification Program: Permanently marked with certification label of one of the following: Insulating Glass Certification Council, Associated Laboratories, Inc National Accreditation and Management Institute.

1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form, made out to Owner and signed by manufacturer, in which manufacturer agrees to furnish replacements for units that deteriorate

from normal use by developing defects attributable to the manufacturing process, f.o.b. the nearest shipping point to Project site, within warranty period.

1. Coated Glass:
   a. Defects: Peeling, cracking, and other indications of degradation of metallic coating.
   b. Warranty Period: 10 years from date of Substantial Completion.
2. Insulating Glass:
   a. Deterioration: Failure of hermetic seal resulting in obstruction of vision by dust, moisture, or film on interior surfaces of glass.
   b. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MONOLITHIC FLOAT GLASS MATERIALS

A. **(GL-1) Uncoated ¼" Clear Float Glass**: ASTM C 1036, Type I (transparent glass, flat), Quality q3 (glazing select). Where glass designated below, indicated on drawings, or required by building codes, provide Type I (transparent glass, flat), Class 1 (clear) glass lites complying with the following:

1. Uncoated Clear Annealed Float Glass: Annealed or Kind HS (heat strengthened), Condition A (uncoated surfaces) where heat strengthening is required to resist thermal stresses induced by differential shading of individual glass lites and to comply with performance requirements.
2. Uncoated Clear Heat-Strengthened Float Glass: Kind HS (heat strengthened).
   a. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed, unless otherwise indicated.

2.2 MONOLITHIC TWO-PLY LAMINATED GLASS

A. **(GL-2) Uncoated 5/16" Clear Fully Tempered, Laminated Burglary Resisting Glazing Material:**

1. 5/16" thick laminated glass (1/8"::0.06" PVB::1/8")
   a. Outer Ply: 1/8" Kind FT (fully tempered), Category Classification B per ANSI Z97.1.
   b. Interlayer: 0.060" Minimum Polyvinyl Butyral sheets
   c. Inner Ply: 1/8" Kind FT (fully tempered), Category Classification B per ANSI Z97.1.
2. Laminated glass products to be fabricated in autoclave with heat, plus pressure, free of foreign substances and air pockets.
3. Laminated glass shall comply with ASTM C1172 and with other requirements as specified (UL 972, ASTM F1233, etc.).

2.3 INSULATING GLASS UNITS - **Insulating Tempered Glass & 1" Insulating Glass**

A. General: Insulating-Glass Units: Pre-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190 and complying with requirements designated below, indicated on Drawings, or required by building code.

1. Provide Kind HS (heat-strengthened) float glass in place of annealed glass where needed to resist thermal stresses induced by differential shading of individual glass lites and to comply with glass design requirements specified in "Performance Requirements" Article. Provide Kind FT (fully tempered) where safety glass is indicated.

2. Sealing System: Dual seal with manufacturer's standard primary and secondary sealants.
3. Spacer: Manufacturer's standard.
4. Corner Construction: Manufacturer's standard.
5. Overall Unit Thickness and Thickness of Each Lite: 25 mm (1") and 6 mm (1/4") Dimensions indicated are nominal and the overall thicknesses of units are measured perpendicularly from outer surfaces of glass lites at unit's edge.
6. Interspace Content: Air.

B. LOW-E INSULATING GLASS **- (GL-3) Low-E 1" Insulating Glass**:

1. Provide glass complying with requirements designated below, indicated on drawings, or required by building code. Provide Kind HS (heat-strengthened) float glass in place of annealed glass where needed to resist thermal stresses induced by differential shading of individual glass lites and to comply with glass design requirements specified in "Performance Requirements" Article. Provide Kind FT (fully tempered) where safety glass is indicated.
2. Interspace Content: Air
3. Indoor Lite: Float glass, Class 1 (clear), Annealed, Kind HS (heat strengthened), Condition C (other coated glass), Kind FT (fully tempered), Condition C (other coated glass), Kind HS (heat strengthened), Condition A (uncoated surfaces), Kind FT (fully tempered) Condition A (uncoated surfaces).
4. Outdoor Lite: Float glass, Class 1 (clear), Annealed, Kind HS (heat strengthened), Condition A (uncoated surfaces), Kind HS (heat strengthened), Condition C (other coated glass), Kind FT (fully tempered), Condition A (uncoated surfaces), Kind FT (fully tempered) Condition C (other coated glass).
5. Low-Emissivity Coating: Coating on Surface #2.
6. Winter Nighttime U-Value: Minimum value of 0.29 unless otherwise noted.
7. Summer Daytime U-Value: Minimum value of 0.28 unless otherwise noted.
8. Solar Heat Gain Coefficient: Minimum 0.27 unless otherwise noted.
9. Visible Light Transmittance: Minimum 62% unless otherwise noted.
10. Product: Subject to compliance with requirements, provide Solarban 70XL on Clear manufactured by PPG Industries, Sunguard SNX 62/27 Clear on Clear manufactured by Guardian Industries, Corp., or approved equivalent.

2.4 GLAZING SEALANTS

A. General: Provide products of type indicated, complying with the following requirements:
1. Compatibility: Select glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Colors of Exposed Sealants: As selected by Architect from manufacturer's standard colors.

B. Elastomeric Glazing Sealants: ASTM C 920, Type S (single component), Grade NS (nonsag), Class 25, Use NT (nontraffic), M, G, A, and, as applicable to glazing substrates indicated, O.
1. Glazing Sealant for Fire-Resistive Glazing Products: Sealant used in test assembly to obtain fire-protection rating.
2. Low-Modulus Nonacid-Curing Silicone: With additional movement capability of 50 percent movement in extension and 50 percent movement in compression when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719.

3. Medium-Modulus Neutral-Curing Silicone: With additional movement capability of 50 percent movement in extension and 50 percent movement in compression when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719.

C. Glazing Sealant for Fire-Resistive Glazing Products: Identical to product used in test assembly to obtain fire-protection rating.

D. VOC Content: For sealants used inside of the weatherproofing system, not more than 250 g/L when calculated according to 40 CFR 59, Subpart D.

2.5 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tape: Preformed, butyl-based elastomeric tape with a solids content of 100 percent with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated and complying with ASTM C 1281 and AAMA 800 for products indicated below:
1. AAMA 804.3 tape, where indicated.
2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

B. Expanded Cellular Glazing Tape: Closed-cell, PVC foam tape; factory coated with adhesive on both surfaces; packaged on rolls with release liner protecting adhesive; and complying with AAMA 800 for the following types:
1. Type 1, for glazing applications in which tape acts as the primary sealant.
2. Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.6 GLAZING GASKETS

A. Compression Gaskets: Molded or extruded gaskets of type and material indicated below and of profile and hardness required to maintain watertight seal:
1. Neoprene or EPDM dense compression gaskets complying with ASTM C 846.
2. Silicone dense compression gaskets complying with ASTM C 1115.
3. Neoprene, EPDM, or Silicone soft compression gaskets complying with ASTM C 509, Type II, black.

2.7 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85, plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

F. Perimeter Insulation for Fire-Resistive Glazing: Identical to product used in test assembly to obtain fire-resistance rating.

2.8 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing standard, to comply with system performance requirements.

PART 3 - EXECUTION

3.1 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
   1. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.
   2. Protect glass edges from damage during handling and installation. Remove glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance from Project site and legally dispose of off Project site.
   3. Apply primers to joint surfaces where required for adhesion of sealants, as determined by sealant compatibility and adhesion testing.
   4. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
   5. Provide spacers for glass lites where the length plus width is larger than 50 inches unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances.

B. Protection:
   1. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface.
   2. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter.

C. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged, including natural causes, accidents, and vandalism, during construction period.

END OF SECTION 08 81 00

Division 09 - Finishes

SECTION 09 21 16 - GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Interior gypsum wallboard.
   2. Exterior gypsum sheathing board.
   3. Non-load-bearing steel framing.
   4. Weather-resistant sheathing paper.

1.2 SUBMITTALS

A. Product Data: For each product indicated.

1.3 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: For gypsum board assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 STEEL FRAMING

A. Steel Framing, General: Comply with ASTM C 754 for conditions indicated.
   1. Steel Sheet Components: Metal complying with ASTM C 645 requirements.
      a. Protective Coating:
         1) Interior Applications: ASTM A 653, G40, hot-dip galvanized zinc corrosion-resistant coating.
         2) Exterior Applications: ASTM A 653/A 653M, G60, hot-dip galvanized zinc corrosion-resistant coating.

B. Suspended Ceiling and Soffit Framing:
   1. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch diameter wire, or double strand of 0.0475-inch diameter wire.
   2. Hanger Attachments to Concrete if required:
      a. Powder-Actuated Fasteners: Suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other devices for attaching hangers of type indicated, and capable of sustaining, without failure, a load equal to 10 times that imposed by construction as determined by testing according to ASTM E 1190 by a qualified independent testing agency.
   3. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.162-inch diameter.

4. Carrying Channels: Cold-rolled, commercial-steel sheet with a base metal thickness of 0.0538 inch, a minimum 1/2-inch- wide flange, and in depth indicated.
5. Furring Channels (Furring Members):
   a. Cold Rolled Channels: 0.0538-inch bare steel thickness, with minimum 1/2-inch-wide flange, 3/4 inch deep.
   b. Steel Studs: ASTM C 645, in depth indicated.
      1) Minimum Base Metal Thickness: 0.0179 inch
   c. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch deep, unless indicated otherwise.
      1) Minimum Base Metal Thickness: 0.0179 inch
   d. Resilient Furring Channels: As noted on drawings, 1/2-inch-deep members designed to reduce sound transmission, and asymmetrical with single leg.

C. Grid Suspension System for Interior Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.
1. Products:
   a. Armstrong World Industries, Inc.; Furring Systems/Drywall.
   b. Chicago Metallic Corporation; Drywall Furring System.
   c. USG Interiors, Inc.; Drywall Suspension System.

D. Partition and Soffit Framing: All thicknesses are minimums; verify if drawings call for specific gauge.
1. Steel Studs and Runners: ASTM C 645, in depth indicated.
   a. Minimum Base Metal Thickness: 0.0179 inch.
2. Deflection Design Options:
   a. Steel sheet top runner manufactured to prevent cracking of gypsum board applied to interior partitions resulting from deflection of structure above; in thickness indicated for studs and in width to accommodate depth of studs. Refer to manufacturer's recommendations for use in axial load-bearing stud conditions or above continuous window spandrels.
      1) Deep-Leg Deflection Track: ASTM C 645 top runner with 2-inch deep flanges. Requires U-Channels and angles installed continuously throughout the uppermost punch-outs to align the studs vertically within the plane of the wall.
      2) Slotted Deflection Track: ASTM C 645 Top runner with 2 1/2" deep flanges with vertical slots.
3. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
   a. Minimum Base Metal Thickness: 0.0179 inch.
4. Cold-Rolled Channel Bridging: 0.0538-inch bare steel thickness, with minimum 1/2-inch-wide flange, and in depth indicated.
   a. Clip Angle: 1-1/2 by 1-1/2 inch, 0.068-inch-thick, galvanized steel.
5. Hat-Shaped, Rigid Furring Channels: ASTM C 645, in depth indicated.
   a. Minimum Base Metal Thickness: 0.0179 inch
6. Resilient Furring Channels: 1/2-inch-deep, steel sheet members designed to reduce sound transmission. Asymmetrical or hat shaped, with face attached to single flange by a slotted leg (web) or attached to two flanges by slotted or expanded metal legs.
7. Cold-Rolled Furring Channels: 0.0538-inch bare steel thickness, with minimum 1/2-inch-wide flange, and in depth indicated.
   a. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum bare steel thickness of 0.0312 inch.
   b. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch-diameter wire, or double strand of 0.0475-inch diameter wire.

8. Z-Shaped Furring: With slotted or non-slotted web, face flange of 1-1/4 inches, wall attachment flange of 7/8 inch, minimum bare metal thickness of 0.0179 inch, and depth required to fit insulation thickness indicated.
9. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power and other properties required to fasten steel members to substrates.

2.2 PANEL PRODUCTS

A. Panel Size, General: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.

B. Gypsum Wallboard: ASTM C 1396.
1. Regular Type: In thickness indicated and with long edges tapered and featured (rounded or beveled).
2. Type X: In thickness indicated and with long edges tapered and featured (rounded or beveled).

C. Flexible Gypsum Wallboard: ASTM C 1396, manufactured to bend to fit tight radii and to be more flexible than standard regular-type panels of the same thickness, 1/4 inch thick, and with long edges tapered. Apply in double layer at curved assemblies.

D. Abuse-Resistant Gypsum Wallboard: ASTM C 1396, manufactured to produce greater resistance to surface indentation and through-penetration than standard gypsum panels, with core type and in thickness indicated, and with long edges tapered.
1. Products:
a. National Gypsum Company; Gold Bond Hi-Abuse Wallboard.
b. United States Gypsum Co.; SHEETROCK Brand Abuse-Resistant Gypsum Panels.

E. Exterior Gypsum Sheathing Panels for Walls, Parapets, Ceilings and Soffits:
1. Exterior Glass-Mat Gypsum Soffit and Ceiling Board: ASTM C 1396/C 1396M and C 1177/C 1177M, with core type and in thickness indicated and with manufacturer's standard edges.
a. Product: G-P Gypsum Corp; Dens-Armor Plus. Install manufacturer’s recommended taping system over joints.
2. Glass-Mat Gypsum Sheathing Board (exterior walls): ASTM C 1177/C 1177M, with core type and in thickness indicated.
a. Products:
1) G-P Gypsum Corp; Dens-Glass Gold. Install manufacturer’s recommended taping system over joints.
2) CertainTeed Gypsum; GlasRoc high-performance sheathing. Install manufacturer’s recommended taping system over joints.
3) United States Gypsum Co.; SECUROCK Glass-mat sheathing. Install manufacturer’s recommended taping system over joints.
3. Glass-Mat Gypsum Sheathing Board (roof side of parapets): ASTM C 1177/C 1177M, with core type and in thickness indicated.
a. Product: G-P Gypsum Corp; Dens-Deck Roof Board.
b. United States Gypsum Co.; SECUROCK Glass-Mat Roof Board.

2.3 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.
1. Corner bead: Use at outside corners.

2. Bullnose Bead: Use at outside corners.
3. LC-Bead: Use at exposed panel edges.
4. L-Bead: Use where indicated.
5. U-Bead: Use where indicated.
6. Expansion (Control) Joint: Use as noted below and where indicated on drawings.
   a. Ceilings
      1) Install control joints in areas exceeding 2500 sq. ft. (232 sq. m).
      2) Space control joints not more than 50 feet (15.2 m) o.c.
      3) Install control joints where ceiling framing or furring changes direction.
   b. Partitions and Furring
      1) Install control joints in partitions and wall furring runs exceeding 30 feet.
      2) Space control joints not more than 30 feet o.c.
      3) Install control joints in furred assemblies where control joints occur in base exterior wall
7. Curved-Edge Corner bead: With notched or flexible flanges; use at curved openings.

B. Exterior Trim: ASTM C 1047, hot-dip galvanized steel sheet or rolled zinc.
1. Corner bead: Use at outside corners.
2. LC-Bead: Use at exposed panel edges.
3. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening. Use as noted below and where indicated on drawings.
   a. Ceilings
      1) Install control joints in areas exceeding 2500 sq. ft. (232 sq. m).
      2) Space control joints not more than 50 feet (15.2 m) o.c.
      3) Install control joints where ceiling framing or furring changes direction.

C. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.
1. Products:
   a. Fry Reglet Corp.; As indicated by designation on Drawings
   b. Gordon, Inc.; As indicated by designation on Drawings
   c. MM Systems Corporation; As indicated by designation on Drawings
   d. Pittcon Industries; As indicated by designation on Drawings
2. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221, alloy 6063-T5.
3. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified

2.4 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475.

B. Joint Tape:
1. Interior Gypsum Wallboard: Paper.
2. Glass-Mat Gypsum Soffit Board: As recommended by panel manufacturer.
3. Glass-Mat Gypsum Sheathing Board: As recommended by panel manufacturer.
4. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
1. Prefilling: At open joints**,** rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.

2. Embedding and First Coat: For embedding tape and first coat on joints, flanges of trim accessories, and fasteners, use setting-type taping compound.
   a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound**.**

D. Joint Compound for Exterior Applications:
1. Glass-Mat Gypsum Soffit Board: As recommended by manufacturer.
2. Glass-Mat Gypsum Sheathing Board: As recommended by manufacturer.

2.5 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining, latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
1. Products:
   a. Pecora Corp.; AC-20 FTR Acoustical and Insulation Sealant.
   b. United States Gypsum Co.; SHEETROCK Acoustical Sealant.

C. Acoustical Sealant for Concealed Joints: Nondrying, non-hardening, non-skinning, non-staining, gunnable, synthetic-rubber sealant recommended for sealing interior concealed joints to reduce airborne sound transmission.
1. Products:
   a. Ohio Sealants, Inc.; Pro-Series SC-170 Rubber Base Sound Sealant.
   b. Pecora Corp.; BA-98.
   c. Tremco, Inc.; Tremco Acoustical Sealant.

D. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

E. Sill Seal at Exterior Walls:
1. Sill Seal: Provide flexible polyethylene foam gasketing strip between concrete foundation and sill plate. Strip shall be .25” x 5.5” for 6” metal stud walls. Provide “Weathmate Sill Seal” by Dow Building Solutions or equal.

F. Sound Attenuation Blankets: Refer to Division 07 Section “Blanket Insulation”.

G. Vapor Barrier: Where indicated on Drawings, provide 6 mil polyethylene sheet vapor retarder on the “warm” face of studs in exterior walls. Tape joints per manufacturers recommendations.

H. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

PART 3 - EXECUTION

3.1 NON-LOAD-BEARING STEEL FRAMING INSTALLATION

A. General: Comply with ASTM C 754, and ASTM C 840 requirements that apply to framing installation.

B. Suspended Ceiling and Soffit Framing:
   1. Suspend ceiling hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
   2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
   3. Attach hangers to structural members. Do not support ceilings from or attach hangers to permanent metal forms, steel deck tabs, steel roof decks, ducts, pipes, or conduit.
   4. Screw furring to framing.
   5. Wire-tie or clip furring channels to supports, as required to comply with requirements for assemblies indicated.
   6. Grid Suspension System: Attach perimeter wall track or angle where grid suspension system meets vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

C. Partition and Soffit Framing:
   1. Where studs are installed directly against exterior walls, install isolation strip between studs and wall.
   2. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum board.
   3. Frame door openings to comply with GA-600 and with gypsum board manufacturer's applicable written recommendations, unless otherwise indicated. Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
      a. Install two studs at each jamb, unless otherwise indicated.
   4. Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.

D. Z-Furring Members: Erect insulation vertically and hold in place with Z-furring members.
   1. Until gypsum board is installed, hold insulation in place with 10-inch staples fabricated from 0.0625-inch diameter, tie wire and inserted through slot in web of member.

3.2 PANEL PRODUCT INSTALLATION

A. Gypsum Board: Comply with ASTM C 840 and GA-216.
   1. Space fasteners in panels that are tile substrates a maximum of 8 inches on center.
   2. On ceilings, apply gypsum panels before wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.

3. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
   a. Stagger abutting end joints not less than one framing member in alternate courses of board.
   b. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
4. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
5. Single-Layer Fastening Methods: Apply gypsum panels to supports with steel drill screws.
6. Multilayer Fastening Methods: Fasten base layers; and face layers separately to supports with screws; fasten face layers with adhesive and supplementary fasteners; or, as required to comply with requirements for fire-resistance-rated assemblies indicated.
7. Laminating to Substrate: Comply with gypsum board manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

3.3 FINISHING

A. Installing Trim Accessories: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Finishing Gypsum Board Panels: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration.
   1. Prefill open joints, rounded or beveled edges, and damaged surface areas.
   2. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
   3. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.
   4. Glass-Mat, Water-Resistant Backing Panels: Finish according to manufacturer's written instructions.

C. Gypsum Board Finish Levels: Finish panels to levels indicated below, according to ASTM C 840 and GA 214, for locations indicated:
   1. Level 1: Embed tape at joints in ceiling plenum areas, concealed areas, and where indicated, unless a higher level of finish is required for fire-resistance-rated assemblies and sound-rated assemblies.
   2. Level 2: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges where panels are substrate for tile and where indicated.
   3. Level 4: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges of all panel surfaces that will be exposed to view, unless Level 5 finish is otherwise indicated.
   4. Level 5: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges and apply a final skim coat over the entire surface of panels that will be exposed to view. Use Level 5 for gypsum panel surfaces to be finished with gloss, semi-gloss or enamel paint unless otherwise indicated.

END OF SECTION 09 21 16

SECTION 09 30 00 - TILING

PART 1 - GENERAL

1.01 SUMMARY:

A. Provide all of the labor, materials, equipment and services to furnish and install the tile and accessories as indicated on the Drawings and as specified herein.

B. This section includes the following:

1. Porcelain Tile
2. Stone thresholds installed as part of tile installation.
3. Waterproof membrane for thin-set tile installations.
4. Crack-suppression membrane for thin-set tile installations.
5. Metal edge/transition strips installed as part of tile installations.

1.02 QUALITY ASSURANCE:

A. In addition to complying with all pertinent codes and regulations, comply with the following:

1. "Handbook for Ceramic Tile Installation" (latest edition) as published by the Tile Council of America, Inc., TCNA.
2. "American National Standard Specifications for Ceramic Tile " (A137.1-latest edition).
3. ANSI Specifications: American National Standard Specification for Installation of Ceramic Tile. Reference number is at specific installation area.

B. **Tile contractor, by commencing the work of this section, assumes overall responsibility to assure that all assemblies, components and parts shown or required within the work of this section comply with contract documents and are compatible with each other and with the conditions and expected use.**

C. Pre-Installation Meeting: Prior to tile installation, conduct a pre-installation project meeting. Contractor, Subcontractor, Material Suppliers, Architect and Owner Representative shall be notified of the meeting.

D. Source Limitations for Tile: Obtain all tile and Setting and Grouting Material from one source.

E. Source Limitations for Setting and Grouting Material: obtain ingredients of a uniform quality for each mortar, adhesive and grout component from a single manufacturer and each aggregate from one source.

F. Source Limitations for other Products: Obtain each of the following products specified in this section through one source from a single manufacturer for each product:

1. Stone Thresholds
2. Waterproofing
3. Joint Sealants
4. Metal edge strip

G. Mockups: Build mockups to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and executions.

1. Build mockup of each type of floor tile installation.

2. Build mock up of each type of wall tile installation including wall graphics or patterns.

H. Installer Qualification: Engage an installer that has a minimum of five years commercial experience with tile installations similar in material, design and scope to that indicated.

1.03 SUBMITTALS:

A. Prior to installation, submit to the Architect for review the following:
1. Physical samples:
a. Tile and tile accessory pieces: Submit two (2) samples of each type and color specified.
b. Grout.
c. Stone thresholds in 6-inch lengths.
d. Metal edge strips in 6-inch lengths.
2. Master Grade Certificate, signed by an officer of the firm manufacturing the tile used, and issued when the shipment is made, stating the grade, kind of tile, identification marks for tile containers, and the name and location of the Project.

C. Maintenance and operation manual: Submit tile manufacturer's maintenance guides for Owner's use in maintaining all tile herein specified.

D. Shop Drawings: Show location of each type of tile and tile pattern. Show widths, details and locations of expansion, contraction, control and isolation joints.

E. Product Data: For each product indicated.

F. Qualification Data: For firms and persons specified in “Quality Assurance” article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, names of Architects and Owners, plus other information specified.

1.04 PRODUCT HANDLING:

A. Deliver all materials of this Section to the job site in their original unopened containers with all labels intact and legible at time of use.

1.05 EXTRA MATERIALS:

A. Deliver extra materials to Site. Furnish extra materials described below that match products installed, and are packaged with protective covering for storage, and are identified with labels describing contents, name of school and the school’s address.

1. Tile and Trim Units: Furnish quantity of full size units equal to 2 percent of amount installed for each type, composition, color, pattern, and size indicated.
2. This material shall not be available to the Contractor for replacement goods within the Contractor’s General Warranty period for the Work.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
   1. Basis-of-Design Product: The design for each tile type is based on the product named. Provide the named product.

2.02 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.
   1. Provide tile complying with Standard grade requirements, unless otherwise indicated.
   2. For facial dimensions of tile, comply with requirements relating to tile sizes specified in Part 1 "Definitions" Article.

B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI Standards referenced in "Setting and Grouting Materials" Article.

C. Colors, Textures, and Patterns: Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics provide specific products or materials complying with the following requirements:
   1. As selected by Architect from manufacturer's full range.

D. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

E. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer, unless otherwise indicated.
   1. Where tile is indicated for installation in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

F. Factory-Applied Temporary Protective Coating: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating with continuous film of petroleum paraffin wax, applied hot. Do not coat unexposed tile surfaces.

2.03 FLOOR TILE PRODUCTS

A. Manufacturers:
   1. Florida Tile

B. FLOOR TILE – “PT-1” HIGH DEFINITION PORCELAIN TILE:
   1. Composition: High Definition Color Body Porcelain Tile - Impervious body, meets ASTM C373
   2. Size: 12 X 24 inches
   3. Thickness: 9.5mm

4. Face: Unglazed
5. DFOC: Not less than 0.42
6. Basis-of-Design: Florida Tile; Level 10, FT13334112x24, color Mezzanine Gold
   Grout: Tec Specialty - Epoxy, #915 Light Smoke
7. Wall Base - "B-1": 3"H X 12"L bullnose base flush with floor tile. Provide inside/outside corners.
8. Breaking Strength: pass lbf average.
9. Installation: Epoxy Grout, Thin set
   Installation Type: F125-Partial Thin-Set (partial coverage crack isolation membrane).
   Installation Pattern: See A700

2.05 INSTALLATION TYPE - SETTING BED:

A. Source of Materials: Provide materials obtained from one source for each type and color of tile, grout and setting materials.

B. Floor Tile: Work shall be executed and tested in accordance with current editions of the following standards:
   1. A108.1A Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar.
   2. A108.1B Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar.
   3. A108.1C Contractors Option: Installation of Ceramic Tile usingA108.1A or A108.1B. American Society of Testing and Materials (ASTM).
      ASTM C150 Specifications for Portland Cement Mortar.
      ASTM C206 Specifications for Hydrated Lime.

2.06 GROUT:

A. Source of Material: Provide materials obtained from one source for each type and color of tile, grout and setting materials.

B. Floor Tile: epoxy based grout. Work shall be executed and tested in accordance with the current edition of the following standards:
   1. ANSI A118.8, 100 percent solids epoxy grout.

C. Acceptable Manufacturers:
   1. TEC Specialty (H.B. Fuller Construction Products Inc.)

2.06 SEALANT - EXPANSION JOINTS:

A. Custom color, fungicidal one-part silicone urethane rubber sealant, meeting Federal Specification TT-001543, Class A or B (COM-NBS). Install as recommended by TCA and tile manufacturer if not otherwise indicated on the Drawings.
   1. Subject to compliance with requirements, provide Dow Corning 782 or 784 as a basis-of-design product or a comparable product of equal quality.

2.07 CRACK-SUPPRESSION / WATERPROOF MEMBRANE FOR THIN-SET TILE:

A. Comply with ANSI A118.10. Install crack isolation membrane over substrate as recommended by tile manufacturer's recommendations. On all elevated slabs, install waterproof membrane system as recommended by TCA and tile manufacturer's

recommendations.

1. Acceptable Manufacturers: Fabric reinforced, fluid-applied product. Liquid-latex rubber with fabric reinforcement.
   a. Custom Building Products; Trowel & Seal Waterproofing and Anti-Fracture Membrane.

2.08 THRESHOLD & TRANSITIONS:

A. Marble: White Carrara, polished exposed surface; Marble threshold shall be 2" wide and of a thickness appropriate for thin-set application

B. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications, stainless steel; ASTM A 666, 300 Series exposed-edge material.

2.09 OTHER MATERIALS:

A. All other materials not specifically described but required for a complete and proper tile installation, shall be as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 TCA INSTALLATION METHODS:

A. Tile shall be installed in accordance with the following TCA Installation Methods:
   1. Cement mortar-set floor tile: F-114.
   2. Thin-Set: F125
   3. Thin-Set with waterproof membrane: F122
   4. Wall tile on gypsum board: W-223.
   5. Wall tile on masonry: W-202.
   6. Shower Floor: B421

3.02 LAYOUT:

A. Determine location of all movement joints prior to beginning work.
B. Layout all tile work so as to avoid cuts of less than one-half tile size.
C. Locate cuts in both so as to be the least conspicuous.
D. Align all wall joints to give straight uniform grout lines, plumb and level.
E. Align floor tile joints square with walls, and make them uniform in width.
F. Caulk expansion joints wherever tile butts a perpendicular surface.

G. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.03 CLEAN-UP:

A. Remove debris daily while work is in progress. At completion of this work, leave entire work area in neat and work-like condition satisfactory for receipt of other related items of work that are to be installed as part of other sections.
B. Remove all grout haze, observing tile manufacturer's recommendations as to use of

chemical cleaners. Rinse tile work thoroughly with water before and after using chemical cleaners.

END OF SECTION 09 30 00

SECTION 09 51 00 - ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.1 SCOPE:

The work covered by this section consists of furnishing all labor and materials for the complete installation of acoustical tile ceilings.

1.2 QUALITY ASSURANCE:

A. In addition to complying with all pertinent codes and regulations, comply with all pertinent recommendations published by the Ceilings and Interior Systems Contracting Association and the requirements of ASTM C636 (latest edition).

B. Seismic Loads: Design and size components to withstand seismic loads in accordance with the local governing building code, for the seismic design category D as indicated on the structural drawings. All ceilings and suspended equipment is to be installed as required by ASCE section 9.6 and anchored per NCSBC section 1705.3.4.

1.3 SUBMITTALS:

A. Prior to installation, submit the following to the Architect for review:

1. Submit manufacturer's project specifications and installation instructions for each type of acoustical panel and suspension system required, including certified laboratory test reports and other data necessary to show compliance with these specifications.
2. Include manufacturer's recommendations for cleaning and refinishing acoustical panels, including precautions against materials and methods which may be detrimental to finishes and acoustical performances.
3. Shop drawings, showing layout of each type of ceiling system in relation to surrounding structure, mechanical work (which shall include, but not be limited to, duct work and piping), lighting and electrical work, and any other pertinent fixtures and equipment. Drawings shall also show location of accessible panels. The reproduction of Architect's Drawings as the basis of these shop drawings will not be acceptable.
4. Physical Samples: Furnish one sample of each type of ceiling board or tile and exposed grid in finish and pattern specified.

1.4 JOB CONDITIONS:

A. Do not install interior acoustical panel ceilings until space enclosed and weatherproof, and until work above ceilings completed, and unit ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

1.5 EXTRA MATERIALS

A. Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Ceiling Panels: 2 unopened boxes for each type indicated.

B. This material shall not be available to the contractor for replacement goods within the building warranty period.

PART 2 - PRODUCTS

2.1 ACOUSTICAL CEILING:

A. Ceiling panel: ACT-1: acoustical ceiling with angled tegular edge and 5/8”

1. Armstrong Dune Square Lay-In and Tegular : No. 1774 (White). 24" x 24" x 5/8.

E. Suspension System Components: Main beams and cross tees in accordance with the requirements of the local governing building code, for seismic design category D as described in ESR-1308. All ceilings and suspended equipment is to be installed as required by ASCE section 9.6 and anchored per NCSBC section 1705.3.4.

1. Structural Classification: ASTM C 635, Heavy Duty.
2. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
3. Represented Systems: Prelude XL 15/16” as manufactured by Armstrong World Industries.

a. Attachment Devices: In accordance with the requirements of the local governing building code, for seismic design Category D, E and F.
b. Wire for Hangers and Ties: In accordance with the requirements of the local governing building code, for seismic design Category D, E and F.
c. Wall Moldings: In accordance with the requirements of the local governing building code, for seismic design Category D, E and F as described in ESR-1308.
1) Nominal 7/8 inch x 7/8 inch hemmed, pre-finished angle molding (7800)

F. Accessories:
1. BERC2 – 2 inch Beam End Retaining Clip, 0.034 inch thick, hot-dipped galvanized cold-rolled steel per ASTM A568 – used to join main beam or cross tee to wall molding.

2.2 OTHER MATERIALS:

A. All other materials, not specifically described but required for a complete and proper installation of the suspended acoustical ceiling, shall be as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS:

A. Prior to all work of this Section, carefully inspect the installed work of all other Trades and verify that all such work is complete to the point where this installation may properly commence.

B. Verify that suspended acoustical ceiling may be installed in accordance with the original

design, all codes and regulations, the manufacturer's current recommendations and the approved submittals.

C. In the event of discrepancy, immediately notify the Architect.

D. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 COORDINATION WITH MECHANICAL AND ELECTRICAL:

A. Coordinate with the requirements of other Trades. Use all means necessary to interface with adjacent materials.

B. Where recessed lighting fixtures are installed in suspension system, consult with the fixture manufacturer prior to preparation of shop drawings so that the work of this Section shall be installed ready to receive the lighting fixtures. Modify the suspension system members adjacent to fixture locations as approved by the Architect and to the extent necessary to accommodate the fixtures.

C. In the event lighting fixtures or air distribution or return air equipment other than those specified should be substituted under their respective Sections and/or Drawings and should the substituted fixtures require more extensive modifications, the Contractor shall make such required additional modifications and any additional cost shall be paid by the Contractor.

D. Where wide or deep air conditioning ducts above suspended acoustical ceilings interfere with suspension hangers, provide independent framing below the duct work to support the ceiling as an obligation under this Section. Framing shall meet the approval of the Architect. Framing shall be supported from floor or roof structure above and shall in no case be attached to the duct work, piping or conduit.

3.3 SUSPENDED CEILING INSTALLATION:

A. Comply with ASTM C 636 as applicable to acoustical panel ceilings, except to extent more stringent requirements indicated or required for compliance with governing regulations or fire resistance ratings.

B. Suspend ceiling hangers from building structural members only, and only as indicated.

1. Secure to structure, including intermediate framing members, by attaching to metal clips designed for type of member involved, or where possible, by looping and wire-tying directly to members.

C. Space hangers not more than 4'-0" o.c. along each member supported directly from hangers, unless otherwise shown, and provide hanger not more than 6" from ends of each member.

D. For the support of light fixtures, the fixture load shall be supported by supplemental hangers within 6" of each corner, or the fixture shall be supported separately.

3.4 MOLDINGS:

A. Cope exposed flanges of intersecting members so that flange faces will be flush.

B. Install edge moldings of type indicated at edges of each acoustical panel ceiling area, and at

locations where edge of panel would otherwise be exposed after completion of work.

C. Secure moldings to building construction by fastening through holes drilled in vertical leg. Space holes not more than 3" from each end and not more than 16" o.c. Draw-up fasteners for tight set against vertical surfaces.

D. Miter corners of moldings accurately to provide hairline joints.

E. Level moldings with ceiling suspension system, to level tolerance of 1/8" in 12'-0".

3.5 ACOUSTICAL PANEL INSTALLATION:

A. Plan each layout to balance border widths at opposite edges of each ceiling area. Avoid use of less-than-half width units wherever possible. Comply with Architect's reflected ceiling plans to greatest extent possible.

B. Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members.

C. Scribe and cut panels for accurate fit at borders and at interruptions and penetrations by other work through ceilings.

3.6 CLEANING AND PROTECTION:

A. Clean exposed surfaces of acoustical panels and of trim, edge moldings, and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

B. Institute required protection for acoustical panel ceilings, including temperature and humidity limitations and dust control, so that work will be without damage and deterioration at time of substantial completion.

END OF SECTION 09 51 00

SECTION 09 65 19 – RESILIENT FLOORINGS & ACCESSORIES

PART 1 - GENERAL

1.01 SCOPE:

A. Provide all of the labor, materials, equipment and services to furnish and install the resilient products.

1.02 SUBMITTALS:

A. Prior to installation, submit to the Architect for review the following:
   1. Manufacturer's literature fully describing each product and its proper installation for this Project.
   2. Physical sample (each product): All colors and patterns.

PART 2 - PRODUCTS

2.01 RUBBER BASE:

A. B-1: Johnsonite; 4” high, pre-molded traditional rubber cove base, 48 Grey.

Acceptable Manufacturers:
1. Johnsonite.

2.02 OTHER MATERIALS:

A. All other materials, including but not limited to, adhesives, not specifically described but required for a complete and proper installation of resilient tile flooring and other named products, shall be only as recommended by the manufacturer of the material to which it is applied and shall be subject to the approval of the Architect.
B. Provide attic stock for each product in the amount of 1 box of each product. Turn over to owner at the end of the project.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS:

A. Prior to all work of this Section, carefully inspect the installed work of all other Trades and verify that all such work is complete to the point where this installation may properly commence.
B. Verify that resilient tile flooring shall be installed in accordance with the original design and the manufacturer's recommendations.
C. In the event of discrepancy, immediately notify the Architect.
D. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 INSTALLATION:

A. Install all products in strict accordance with the original design and the manufacturer's recommendations.

a. Acceptable Manufacturers
    1. Johnsonite, 960 Acrylic Adhesive

3.03 CLEANING AND PROTECTION:

A. Upon completion of the installation, immediately remove all surplus adhesive from adjacent surfaces. As soon as possible after installation, and in accordance with the timing recommended by the manufacturers, clean, seal, and wax all product surfaces according to manufacturer's recommendations
B. Provide a non-staining paper pathway taped to the resilient flooring in direction of foot traffic throughout the Work.

END OF SECTION 09 65 19

SECTION 09 68 13 - TILE CARPETING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes all of the labor, material, equipment and services to furnish and install carpet tiles.

1.2 SUBMITTALS

A. Product Data: For each product indicated.

B. Shop Drawings: Show the following:
   1. Carpet tile type, color, and dye lot.
   2. Pattern of installation.
   3. Insets and borders.
   4. Edge, transition, and other accessory strips.
   5. Transition details to other flooring materials.

C. Samples: For each color and texture required.

   1. Carpet Tile: Full-size Sample.
   2. Exposed Edge, Transition, and other Accessory Stripping: 12-inch- long Samples.

D. Product Schedule: For carpet tile. Use same designations indicated on Drawings.

E. Maintenance data.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who is certified by the Floor Covering Installation Board or who can demonstrate compliance with its certification program requirements.

B. Mockups: Before installing carpet tile, build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution, if requested by Owner or Architect.

   1. Approved mockups may become part of the completed Work if undamaged at time of Substantial Completion.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Comply with CRI 104, Section 5, "Storage and Handling."

1.5 PROJECT CONDITIONS

A. Comply with CRI 104, Section 7.2, "Site Conditions; Temperature and Humidity" and Section 7.12, "Ventilation."

B. Environmental Limitations: Do not install carpet tiles until wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

C. Do not install carpet tiles over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet tile manufacturer.

D. Where demountable partitions or other items are indicated for installation on top of carpet tiles, install carpet tiles before installing these items.

1.6 WARRANTY

A. Special Warranty for Carpet Tiles: Manufacturer's standard form in which manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, runs, and delamination.

1. Warranty Period: 10 years from date of Substantial Completion.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Carpet Tiles: Equal to 5 percent of amount installed for each type indicated but not less than 4 box’s and not more than 15 box’s.

B. This material shall not be available to the contractor for replacement goods within the building warranty period.

PART 2 - PRODUCTS

2.1 CARPET TILE

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

1. CPT-1:

a. Shaw Contract Group/ Bright Works; Running line: Allure 59327; Color: **starlight 27504**. Tile size 24" X 24".

b. Or approved equivalent.

B. Adhesives:

1. VOC Limits: Oderless, non-toxic

2. Concrete subfloors with up to 3 pounds moisture vapor emissions as determined by Calcium Chloride Test (ASTM F 1869), or 75% relative humidity (ASTM F 2170) and pH of 9.

3. Warranty: Limited Lifetime Bond Warranty

2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or as recommended by carpet tile manufacturer.

B. Provide a smooth buildup of compound at each material transition/location to achieve a flush transition from carpet to a dis-similar materials. This shall eliminate trip hazards between tile floor finishes and carpet tile.

C. Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed carpet tile and is recommended by carpet tile manufacturer for releasable installation.

1. VOC Limits: Provide adhesives that comply with the following limits for VOC content when tested according to ASTM D 5116:

a. Total VOCs: 10.00 mg/sq. m x h.
b. Formaldehyde: 0.05 mg/sq. m x h.
c. 2-Ethyl-1-Hexanol: 3.00 mg/sq. m x h.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with CRI 104, Section 14, "Carpet Modules," and with carpet tile manufacturer's written installation instructions.

B. Installation Method: Glue down; install every tile with full-spread, releasable, pressure-sensitive adhesive..

C. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

D. Installation pattern – *random mix, running bond pattern*

3.2 CLEAN-UP AND PROTECTION

A. Clean-up: Upon completion of the work, remove all waste, excess materials, tools and equipment from job site. Remove loose threads from carpeted surfaces. Remove adhesives from carpet and other surfaces, which are not scheduled to receive adhesive as they occur.
   1. Carefully and thoroughly vacuum clean carpeting with an upright bar type beater, vacuum cleaner.
   2. Usable pieces (approx. one sq. yd. and larger) of carpet not required to complete the work, shall be left on the job site and shall be placed in an orderly manner in an area designated by the Architect for the Owner’s use.

B. Repair: Prior to acceptance of installation, carpet, which is damaged, stained, discolored, torn, ripped or otherwise not acceptable, shall be repaired and replaced with new material in an approved manner recommended by the Architect.

C. Protection: Protect installed carpeting from damages by other Contractors and be responsible for installing protective materials over traffic areas and if necessary closing off areas to traffic.

D. Instruction: After the installation is completed, the carpet manufacturer and contractor shall provide representative to instruct the Owner’s maintenance personnel in the care, cleaning and maintenance of the installed carpet.

END OF SECTION 09 68 13

SECTION 09 91 00 – PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes surface preparation and field painting of the following:
   1. Exposed exterior items and surfaces.
   2. Exposed interior items and surfaces.
   3. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

B. Paint exposed surfaces, except where the paint schedules indicate that a surface or material is not to be painted or is to remain natural. If the paint schedules do not specifically mention an item or a surface, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Architect will select from a full range of standard colors and finishes available.
   1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and ironwork, and primed metal surfaces of mechanical and electrical equipment.

C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels. Do not paint over Underwriters Laboratories (UL), Factory Mutual (FM), or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

D. Related Sections include the following:
   1. Division 02 through 09.
   2. Divisions 22, 23 and 26: Painting of plumbing, mechanical and electrical work is specified in Divisions 22, 23 and 26, respectively.

1.3 DEFINITIONS

A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
   1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
   2. Eggshell refers to low-sheen finish with a gloss range between 5 and 20 when measured at a 60-degree meter.
   3. Satin refers to low-sheen finish with a gloss range between 15 and 35 when measured at a 60-degree meter.
   4. Semigloss refers to medium-sheen finish with a gloss range between 30 and 65 when measured at a 60-degree meter.
   5. Full gloss refers to high-sheen finish with a gloss range more than 65 when measured at a 60-degree meter.

1.4 SUBMITTALS

A. Product Data: For each paint system specified. Include block fillers and primers.
   1. Material List: Provide an inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
   2. Manufacturer's Information: Provide manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material proposed for use

B. Samples for Initial Selection: Manufacturer's color fan deck showing the full range of colors available for each type of finish-coat material indicated.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain block fillers, primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.

B. Comply with MPI standards for products and paint systems.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.

1.7 PROJECT CONDITIONS

A. Apply paints per Paint Manufacturer’s conditions and instructions.

1.8 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied in the quantities described below. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.
   1. Quantity: Furnish the Owner with an additional 5 percent, but not less than 1 gal. or more than 1 case, as appropriate, of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products in the paint schedules.

B. Manufacturers Names: The following manufacturers are referred to in the paint schedules by use of shortened versions of their names, which are shown in parentheses:
   1. The Sherwin-Williams Co. (SW)
   2. Glidden Professional Paints (GP)
   3. PPG Paints (PPG)
   4. Benjamin Moore & Co. (Moore)

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, undercoats, and finish-coat materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
   1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

C. Colors: Provide color selections made by the Architect from the submitted approved manufacturer’s complete set of available colors. Use ‘gray tinted primer’ per manufacturer’s recommendation for base coat of ultradeep colors.

D. Areas to receive accent colors to be designated by Architect. Verify quantity of colors and location using the finish legend, finish plans, room schedule and elevations.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with the Applicator present, under which painting will be performed for compliance with paint application requirements.
   1. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
   2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
   1. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. Reinstall items when

painting is completed. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before surface preparation and painting.

B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning.
   1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
   1. Provide barrier coats over incompatible primers or remove and reprime.
   2. Cementitious Materials: Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation. Prepare surface per manufacturer’s recommendations.

   3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
      a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.

   4. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with the Steel Structures Painting Council's (SSPC) recommendations.

   5. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

D. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
   1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
   2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
   3. Use only thinners approved by paint manufacturer and only within recommended limits.

3.3 APPLICATION

A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
   1. Paint colors, surface treatments, and finishes are indicated in the schedules.
   2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
   3. Provide finish coats that are compatible with primers used.
   4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned-tube radiation, grilles, and similar components are in

place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.

5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
9. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
10. Sand lightly between each succeeding enamel or varnish coat.

B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions sand between applications.
2. Omit primer on metal surfaces that have been shop primed and touchup painted.
3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.
2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.
3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and in occupied spaces.

F. Exposed mechanical items to be painted include, but are not limited to, the following:

1. Pipe hangers and supports.
2. Heat exchangers.
3. Tanks that do not have factory-applied final finishes.
4. Ductwork.
5. Insulation.

6. Motors and mechanical equipment
7. Accessory items.

G. Exposed electrical items to be painted include, but are not limited to, the following:
1. Conduit, piping and fittings.
2. Switchgear (Not already pre-finished).
3. Panelboards (Not already pre-finished).

H. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

I. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing. Use gray tinted primer per manufacturer for base coat with saturated interior paint color selections.

J. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

K. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.
1. Provide satin finish for final coats.

L. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

M. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 CLEANING

A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

3.5 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.

B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.6 INTERIOR PAINT SCHEDULE

A. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:
   1. Low-Luster, Acrylic-Enamel Finish:(for walls) 2 finish coats over a primer.
      a. Primer: Latex-based, interior primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.2 mils.
         1) SW: ProMar 200 Zero VOC Primer, B28W2600 Series
         2) PPG: 6-4900 Speedhide Zero “0” VOC Interior Latex Primer Sealer.
         3) Moore: N372 Eco Spec WB Acrylic Zero VOC Primer.

      b. First and Second Coats: Low-luster (eggshell or satin), acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.8 mils.
         1) Color to match existing.

   2. Flat Acrylic Finish:**(for ceilings and soffits)** 2 finish coats over a primer.
      a. Primer: Latex-based, interior primer applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 1.2 mils.
         1) SW: ProMar 200 Zero VOC Primer, B28W2600.
         2) PPG: 6-4900 Speedhide Zero “0” VOC Latex Primer Sealer.
         3) Moore: N372 Eco Spec WB Acrylic Zero VOC Primer.

      b. First and Second Coats: Low-luster (eggshell or satin), acrylic-latex, interior enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 2.8 mils.
         1) Color to match existing.

END OF SECTION 09 91 00

Division 12 - Furnishings

SECTION 12 24 13 - ROLLER WINDOW SHADES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes manually operated 5% open roller shades shades.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include styles, material descriptions, construction details, dimensions of individual components and profiles, features, finishes, and operating instructions for roller shades.

B. Shop Drawings: Show fabrication and installation details for roller shades, including shadeband materials, their orientation to rollers, and their seam and batten locations.

C. Include plans, elevations, sections, details, details of installation, operational clearances, and relationship to adjoining work.

1. Verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings.

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

E. Roller-Shade Schedule: Use same designations indicated on Drawings. (All interior & exterior windows).

1.3 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Product test reports.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of products.

B. Fire-Test-Response Characteristics: Provide products passing flame-resistance testing according to NFPA 701by a testing agency acceptable to authorities having jurisdiction.

C. Comply with WCMA A 100.1.

D. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. A Manually operated Solar Shading System with fascia and side channels where required. Acceptable manufacturer’s:

1. Mermet
2. SWF Contract
3. Hunter Douglas Contract

2.2 ROLLER SHADES

A. Chain-and-Clutch Operating Mechanisms: With continuous-loop bead chain and clutch that stops shade movement when bead chain is released; permanently adjusted and lubricated.

1. Bead Chains: Stainless steel.

a. Loop Length: Full length of roller shade.
b. Limit Stops: Provide upper and lower ball stops.
c. Chain-Retainer Type: Chain tensioner, jamb mounted.

2. Spring Lift-Assist Mechanisms: Manufacturer's standard for balancing roller-shade weight and lifting heavy roller shades.

a. Provide for shadebands that weigh more than 10 lb or for shades as recommended by manufacturer, whichever criteria are more stringent.

B. Spring Operating Mechanisms: Roller contains spring sized to accommodate shade size indicated. Provide with positive locking mechanism that can stop shade movement at each half-turn of roller and with manufacturer's standard pull.

C. Rollers: Corrosion-resistant steel or extruded-aluminum tubes of diameters and wall thicknesses required to accommodate operating mechanisms and weights and widths of shadebands indicated without deflection. Provide with permanently lubricated drive-end assemblies and idle-end assemblies designed to facilitate removal of shadebands for service.

1. Roller Mounting Configuration: Single roller.
2. Roller Drive-End Location: Right side of inside face of shade typical unless better suited for Opposite side due to location and ease of use/fuction.
3. Coordinate direction of roll with fascia, headbox, or shade-pocket design.
4. Direction of Shadeband Roll**:** Regular, from back of roller.

D. Mounting Hardware: Brackets or endcaps, corrosion resistant and compatible with roller assembly, operating mechanism, installation accessories, and mounting location and conditions indicated.

E. Roller-Coupling Assemblies: Coordinated with operating mechanism and designed to join up to three inline rollers into a multiband shade that is operated by one roller drive-end assembly.

F. Shadebands:

1. Shadeband Material: Light-filtering fabric and/or Light-blocking fabric as indicated on plan.
2. Shadeband Bottom (Hem) Bar: Steel or extruded aluminum.

a. Type: Enclosed in sealed pocket of shadeband material.
b. Color and Finish: As selected by Architect from manufacturer's full range. Direction will be a white color to match window mullions/frame.

G. Installation Accessories:

1. Front Fascia: Aluminum extrusion that conceals front and underside of roller and operating mechanism and attaches to roller endcaps without exposed fasteners.

a. Shape: L-shaped.
b. Height: Manufacturer's standard height required to conceal roller and shadeband when shade is fully open, but not less than 4 inches.

2. Endcap Covers: To cover exposed endcaps.

3. Side Channels: With light seals and designed to eliminate light gaps at sides of shades as shades are drawn down. Provide side channels with shadeband guides or other means of aligning shadebands with channels at tops. Required for black out blinds only.
4. Bottom (Sill) Channel or Angle: With light seals and designed to eliminate light gaps at bottoms of shades when shades are closed. Required for black out blinds only.
5. Installation Accessories Color and Finish: As selected from manufacturer's full range

2.3 SHADEBAND MATERIALS

A. Shadeband Material Flame-Resistance Rating: Testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

B. SHD-1: Light-Filtering Fabric: Woven fabric, stain and fade resistant.

1. Source: from manufacturer's full range.
2. Type: TBD 5% openness from manufacturer's full range.

2.4 ROLLER-SHADE FABRICATION

A. Product Safety Standard: Fabricate roller shades to comply with WCMA A 100.1, including requirements for flexible, chain-loop devices; lead content of components; and warning labels.

B. Unit Sizes: Fabricate units in sizes to fill window:

1. Between Inside Jamb Installation: Width equal to jamb-to-jamb dimension of opening in which shade is installed less 1/4 inch per side or 1/2-inch total.. Length equal to head-to-sill or -floor dimension of opening in which shade is installed less 1/4 inch.

C. Shadeband Fabrication: Fabricate shadebands without battens or seams to extent possible. If seam is required indicate on shop drawings and call Interior Designer to discuss options.

PART 3 - EXECUTION

3.1 ROLLER-SHADE INSTALLATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, operational clearances, and other conditions affecting performance of the Work.

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

C. Install roller shades level, plumb, and aligned with adjacent units, according to manufacturer's written instructions.

D. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.

E. Clean roller-shade surfaces after installation, according to manufacturer's written instructions.

END OF SECTION 12 24 13

Division 49 - Forms

MINORITY BUSINESS PARTICIPATION REQUIREMENTS

Provide with the bid - Under GS 143-128.2(c) the undersigned bidder shall identify **on its bid** (Identification of Minority Business Participation Form) the minority businesses that it will use on the project with the total dollar value of the bids that will be performed by the minority businesses. **Also** list the good faith efforts (Affidavit **A**) made to solicit minority participation in the bid effort.

NOTE: A contractor that performs all of the work with its own workforce may submit an Affidavit (**B)** to that effect in lieu of Affidavit (**A)** required above. The MB Participation Form must still be submitted even if there is zero participation.

Note: Bidders must always submit **with their bid** the Identification of Minority Business Participation Form listing all MB contractors, vendors and suppliers that will be used. If there is no MB participation, then enter none or zero on the form. Affidavit A **or** Affidavit B, as applicable, also must be submitted with the bid. Failure to file a required affidavit or documentation with the bid or after being notified apparent low bidder is grounds for rejection of the bid.

After the bid opening - The Owner will consider all bids and alternates and determine the lowest responsible, responsive bidder. Upon notification of being the apparent low bidder, the bidder shall then file within 72 hours of the notification of being the apparent lowest bidder, the following:

An Affidavit (**C**) that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the 10% goal established. This affidavit shall give rise to the presumption that the bidder has made the required good faith effort and Affidavit **D** is not necessary;

*** OR ***

If less than the 10% goal, Affidavit (**D**) of its good faith effort to meet the goal shall be provided. The document must include evidence of all good faith efforts that were implemented, including any advertisements, solicitations and other specific actions demonstrating recruitment and selection of minority businesses for participation in the contract.

Identification of HUB Certified/ Minority Business Participation

I,_____,
(Name of Bidder)
do hereby certify that on this project, we will use the following HUB Certified/ minority business as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work Type	*Minority Category	**HUB Certified (Y/N)

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

The total value of minority business contracting will be ($)_____.

State of North Carolina AFFIDAVIT A – Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of_____

I have made a good faith effort to comply under the following areas checked:

Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 I.0101)

- ❑ **1 – (10 pts)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- ❑ **2 --(10 pts)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- ❑ **3** – **(15 pts)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- ❑ **4 – (10 pts)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- ❑ **5** – **(10 pts)** Attended prebid meetings scheduled by the public owner.
- ❑ **6** – **(20 pts)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- ❑ **7 – (15 pts)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- ❑ **8** – **(25 pts)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- ❑ **9** – **(20 pts)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- ❑ **10** - **(20 pts)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____Name of Authorized Officer:_____

Signature:_____

Title:_____

SEAL

State of_____, County of_____

Subscribed and sworn to before me this _____day of _____20____

Notary Public_____

My commission expires _____

State of North Carolina --AFFIDAVIT B-- Intent to Perform Contract with Own Workforce.

County of _____

Affidavit of_____
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____

_____contract.
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform all elements of the work on this project with his/her own current work forces; and

The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date:_____Name of Authorized Officer:_____

Signature:_____

Title:_____

SEAL

State of _____, County of_____

Subscribed and sworn to before me this _____day of _____20___

Notary Public _____

My commission expires_____

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit.
This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____I do hereby certify that on the
(Name of Bidder)

_____
(Project Name)

Project ID#_____Amount of Bid $_____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____Name of Authorized Officer:_____

SEAL

Signature:_____

Title:_____

State of _____, County of _____
Subscribed and sworn to before me this _____day of _____20_____
Notary Public_____
My commission expires_____

State of North Carolina AFFIDAVIT D – Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by HUB Certified/ minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____I do hereby certify that on the
(Name of Bidder)

_____
(Project Name)

Project ID#_____Amount of Bid $_____

I will expend a minimum of _____% of the total dollar amount of the contract with HUB certified/ minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Examples of documentation that may be required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.

B. Copies of quotes or responses received from each firm responding to the solicitation.

C. A telephone log of follow-up calls to each firm sent a solicitation.

D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.

E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.

F. Copy of pre-bid roster

G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.

H. Letter detailing reasons for rejection of minority business due to lack of qualification.

I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____Name of Authorized Officer:_____

Signature:_____

Title:_____

SEAL

State of_____, County of _____

Subscribed and sworn to before me this _____day of _____20____

Notary Public_____

My commission expires _____

Construction Contract Document Checklist

(For State Projects)

See Section 405 of "North Carolina Construction Manual".

Use this checklist to check contracts **BEFORE submitting** to The State Construction Office for approval.

If you have questions call (919)807-4100.

General:

- ☐ Must use State form.
- ☐ Contracts must be properly collated per Section 405.10A of the Construction Manual.

Construction Contract:

Page one:

- ☐ Date at top should be on or after date of award letter.
- ☐ Name of contractor (Party of the First Part) must be the same in all places on contract and bonds.
- ☐ Owner's name (Party of the Second Part) must be correct and the same in all places on contract and bond forms.
- ☐ Project description must be accurate.
- ☐ State Construction Office Project ID Number must be on first page of contract.

Page two:

- ☐ Amount must be correct and match award letter.
- ☐ Words and numbers must match.
- ☐ "Summary of Contract award:" must be filled in correctly.

For Example:	Base Bid	$650,000
	Alternate G-1(single ply roof)	9,500
	Less Negotiations (see attachment)	(8,000)
	Total	$651,500

Page three:

- ☐ Number of counterparts must be filled in (at least four - coordinate with Owner).
- ☐ Name of Contractor must match first page.
- ☐ Signatures:

  Corporation:
  - ☐ MUST be signed by PRESIDENT or VICE PRESIDENT and attested by corporate secretary or assistant secretary. These two signatures must be by two different people.
  - ☐ The two signatures must be by two different people.
  - ☐ Must have corporate seal.
  - ☐ Name on corporate seal must match name on contract.
  - ☐ Same person must sign contracts and bonds.

  Non-corporation:
  - ☐ Must be signed by Owner or Partner.
  - ☐ Must be witnessed.
  - ☐ Same person must sign contracts and bonds.
- ☐ Name of Owner must match first page.
- ☐ Owner must sign contract and have signature witnessed.
- ☐ Any Negotiations or attachments must be attached.

Performance and Payment Bonds:

- **MUST USE STATE BOND FORMS** No Exceptions - No Additions - No Riders.
- If the Surety adds a bond number there must be different numbers on the bonds or the word "Performance" after the number on the Performance Bond and the word "Payment" after the number on the Payment Bond.

AIA Bond Form is **NOT** Acceptable. See Article 35, "General Conditions of the Contract"

Page one:

- "Date of Contract" must match date on page one of the contract.
- "Date of Execution" must be on or after "Date of Contract".
- "Name of Principal" (Contractor) must match name on contract.
- "Name of Surety" must be the same on page one and two and must match the Power of Attorney.
- Address of Surety must be shown
- "Name of Contracting Body" (owner) must match name of owner on contract.
- "Amount of Bond" must be 100% of the construction contract amount.
- Words and numbers must match.
- "Project" must match project name on contract.

Page two:

- Number of counterparts must match page three of the contract.
- Name of Contractor must match page one.
- Signatures:

Corporation:

  - MUST be signed by PRESIDENT or VICE PRESIDENT and attested by corporate secretary or assistant secretary. These two signatures must be by two different people.
  - Must have corporate seal.
  - Same person must sign contracts and bonds.

Non-corporation:

  - Must be signed by Owner or Partner.
  - Must be witnessed.
  - Same person must sign contracts and bonds.

- Name of Surety must match page one.
- Attorney-in-Fact must sign and have signature witnessed.
- Must have Surety's corporate seal.
- Must show Bonding Company address.
- If the Attorney-in-Fact is not a resident of North Carolina, then the bonds must be countersigned by a North Carolina RESIDENT agent of the bonding company and his address must be shown on the form.

Power of Attorney sheet:

- This is the sheet that comes from the Bonding Agent and is attached behind the bonds.
- Attorney-in-Fact must appear on this sheet.
- Monetary limit of the Attorney-in-fact must be at least as much as the bond amount.
- The bottom of most Power of Attorney sheets has a place for a date and seal - these must be filled in.
- The certification date (usually at the bottom of the page) of the Power of Attorney must be on or after the "Date of Execution" on page one of the bonds.

Insurance Certificate:

- See Article 34, “General Conditions of the Contract”.
- Must show General Liability and Worker’s Compensation insurance.
- Must show Builder’s Risk or Installation Floater insurance of 100% of the construction contract amount.
- Cancellation clause must be as shown in Article 34 of the “General Conditions” (see following instructions for correction).
- “Certificate Holder” must be The Owner and project description must be correct.

The insurance certificate(s) in the formal Contract do(es) not indicate cancellation notification provisions in accordance with Contract General Conditions Article 34 are included in the insurance policy contract(s). The insurance policy contract(s) must contain cancellation provisions in accordance with this formal Contract Article. Since modification to the insurance certificate form is no longer accepted, this issue may be corrected in the following way:

Document that the insurance policy contract(s) include(s) the required cancellation provision. If an endorsement is required to comply with Article 34 provide a copy of the endorsement and

----------either a) or b) below----------

a) Provide insurance certificate(s) to this office with language appropriately inserted in the insurance certificate block provided for Special Provisions, as follows: “Not withstanding the preprinted cancellation provisions on this form, coverages afforded under the policies will not be cancelled, reduced in amount nor will any coverages be eliminated until at least thirty (30) days after mailing written notice, by certified mail, return receipt requested, to the insured and the owner, of such alteration or cancellation.”

[This language can be continued on an attached and properly titled continuation sheet as long as the first clause (“Notwithstanding….form,”) is on the face of the form]

----------or if space will not allow a), at a minimum ----------

b) Insert at a minimum in the block for Special Provisions, “Cancellation and notice provisions on the attached endorsements control over language on this form.” Then attach the required language provided in b) above.

FORM OF PERFORMANCE BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal (Contractor) _____

Name of Surety: _____

Name of Contracting Body: _____

Amount of Bond: _____

Project

KNOW ALL MEN BY THESE PRESENTS, that we, the principal and surety above named, are held and firmly bound unto the above named contracting body, hereinafter called the contracting body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind, ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the contracting body, identified as shown above and hereto attached:

NOW, THEREFORE, if the principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the contracting body, with or without notice to the surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

_____
(Proprietorship or Partnership)

Attest: (Corporation)

By: _____

Title: _____
(Corp. Sec. or Asst. Sec.. only)

(Corporate Seal)

_____
Contractor: (Trade or Corporate Name)

By: _____

Title: _____
(Owner, Partner, or Corp. Pres. or Vice Pres. only)

_____
(Surety Company)

Witness:

_____

By: _____

Title: _____
(Attorney in Fact)

Countersigned:

_____

_____
(N.C. Licensed Resident Agent)

_____

_____
Name and Address-Surety Agency

_____

_____
Surety Company Name and N.C. Regional or Branch Office Address

(Surety Corporate Seal)

FORM OF PAYMENT BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal (Contractor) _____

Name of Surety: _____

Name of Contracting Body: _____

Amount of Bond: _____

Project _____

KNOW ALL MEN BY THESE PRESENTS, that we, the principal and surety above named, are held and firmly bound unto the above named contracting body, hereinafter called the contracting body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the contracting body identified as shown above and hereto attached:

NOW, THEREFORE, if the principal shall promptly make payment to all persons supplying labor/material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

_____
(Proprietorship or Partnership)

Attest: (Corporation)

By: _____

Title: _____
(Corp. Sec. or Asst. Sec.. only)

(Corporate Seal)

_____
Contractor: (Trade or Corporate Name)

By: _____

Title: _____
(Owner, Partner, or Corp. Pres. or Vice Pres. only)

_____
(Surety Company)

Witness:

_____

By: _____

Title: _____
(Attorney in Fact)

Countersigned:

_____

_____
(N.C. Licensed Resident Agent)

_____

_____
Name and Address-Surety Agency

_____

_____
Surety Company Name and N.C. Regional or Branch Office Address

(Surety Corporate Seal)

Sheet for Attaching Power of Attorney

Sheet for Attaching Insurance Certificates

APPROVAL OF THE ATTORNEY GENERAL

CERTIFICATION BY THE OFFICE OF STATE BUDGET AND MANAGEMENT

Provision for the payment of money to fall due and payable by the

_____

under this agreement has been provided for by allocation made and is available for the purpose of carrying out this agreement.

This _____day of _____ 20___.

Signed _____
Budget Officer

Sheet for Attaching Power of Attorney

Sheet for Attaching Insurance Certificates

APPROVAL OF THE ATTORNEY GENERAL

CERTIFICATION BY THE OFFICE OF STATE BUDGET AND MANAGEMENT

Provision for the payment of money to fall due and payable by the

_____

under this agreement has been provided for by allocation made and is available for the purpose of carrying out this agreement.

This _____day of _____ _____ 20___.

Signed _____
Budget Officer

North Carolina Department of Transportation

COMPLEX COVER SHEET
FACILITY ASBESTOS NOTIFICATION

FORM 1001C

Effective 4-1-97

Revised 1-30-03

Part I. NOTIFICATION

The North Carolina Department of Transportation is hereby notifying you that the buildings listed below have been tested for the presence of asbestos-containing materials (ACM). A survey report and the 1001S forms for each building listed is to be reviewed with you by the designated Facility Coordinator. This will be on file and may be requested by contacting the NC DOT Asbestos Program Manager at (919) 715-0403 EXT.- 217.

Part II. FACILITY INFORMATION

1. Facility Name: **DIVISION ENGINEER'S OFFICE COMPLEX - ALBEMARLE, NC**
2. Facility - FA# / County / Unit **#84-05 / STANLY / DIVISION OR DISTRICT OFFICE**

Part III. BUILDINGS COVERED BY THIS SHEET:

BUILDING NAME	FA#	BUILDING NAME	FA#
DIVISION OFFICE BUILDING	84-05-01		
DIVISION OFFICE STORAGE BLDG.	84-05-02		

Part IV. ASBESTOS MANAGEMENT CERTIFICATION

Asbestos Management Planner (Signature)	Accreditation Number	Date	Phone Number
Jerry F. Russell, Jr. (sgm)	20641	7/17/08	919-715-9344

Part V. ACKNOWLEDGMENT OF NOTIFICATION

Name (Please Print Clearly)	Company	Company Phone Number

Signature:	Date:

NOTE:

DO NOT remove any tags or labels from items labeled as ACM. If you must post any warning labels in association with your work, please remove immediately upon completion of work. If your work requires lockout/tagout of energy sources, please make sure the facility coordinator, for this facility, is fully aware of the extent of your activities. Your safety and health, while visiting our facility, is our paramount concern.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

July 26, 2008

MEMORANDUM

TO: Tim Boland Courier No: 03/ 21/ 01
Facility Coordinator

FROM: Sandi Massello, Program Assistant
General Services
Transportation Building – Room #522
Raleigh
1525 MSC

SUBJECT: Facility Asbestos Notification Forms For Complex No:84- 05

Stanly County, DIV. OR DIST. OFFICE - Division Engineer's Office Complex -

Albemarle, NC

Attached are the original signed Asbestos Notification Form(s) for you to review and administer the Form(s) with employees, contractors, or contract employees performing facility related activities at the above noted location. Also, attached is a cover sheet listing all buildings that you are the Facility Coordinator. For the cover sheet to be used as "Acknowledgment of Notification", all buildings listed must be reviewed with employee, contractor, or contract employee.

If you have anyone refusing to sign the 1001S Form or the 1001C Form please have witnessed by two people and so noted on the Form. Make as many copies as necessary to have signed for "Acknowledgment of Notification". Return the fully executed Forms to this office (address above) and keep a copy for your file. If you need orientation on reviewing and administering the Form please contact me at (919) 715-9677 or the Division Safety Engineer.

It is required that employees watch the "Understanding Asbestos in the Workplace" Video as part of your Safety Program. The video may be scheduled and obtained through DOT Safety and Loss Control at (919) 250-4200.

SJM
Attachment

MAILING ADDRESS:
SANDRA MASSELLO, PROGRAM. ASST.
GENERAL SERVICES ADMINISTRATION
1525 MAIL SERVICE CENTER
RALEIGH, NC 27699-1525

TELEPHONE: 919-715-9677
FAX: 919-715-0399
WEBSITE
smassello@ncdot.gov

LOCATION:
Transportation Building
1 South Wilmington Street
Raleigh, NC
State Courier: 51-31-00

ASBESTOS SIGN .GE WORKSHEET

COUNTY - STANLY No.(84) COMPLEX - DIVISION OFFICE COMPLEX No.(05)

FACILITY COORDINATOR - TIM BOLAND TELEPHONE # - 704-982-0101 DEPT. - DIV. OR DIST. OFFICE

		*ACM SIGNAGE					# OF COORDINATOR	DATE ACM
ASSET #	BUILDING NAME	F	C	T	M	O	SIGNS	SIGNAGE INSTALLED
84-05-01	DIVISION OFFICE BUILDING	X		X		X	1	
84-05-02	DIVISION OFFICE STORAGE BLDG.						1	
TOTALS =		1		1		1	2	

* F= Flooring / C= Ceiling / T= Thermal System Insulation / M= Mechanical / O= Other

DIVISION SAFETY ENGINEER SIGNATURE_____

(To be signed upon completion)

North Carolina Department of Transportation

FACILITY ASBESTOS NOTIFICATION

Form 1001S

Effective 8-1-96
Revised 8-21-96
Revised 1-23-03

art I. NOTIFICATION

The North Carolina Department of Transportation is hereby notifying you that the building listed below has been tested for the presence of asbestos-containing materials (ACM). A survey report is on file and may be requested by contacting the NC DOT Asbestos Program Manager at (919) 715-9344.

Part II. FACILITY INFORMATION

1. Facility Name/Identification Number:

DIVISION OFFICE BUILDING - FA# 84-05-01

2. Facility Address:

DIVISION ENGINEER'S OFFICE COMPLEX
716 WEST MAINT STREET - ALBEMARLE, NC

Part III. ASBESTOS STATUS:

○ **1. No asbestos containing building material (ACBM) was located by asbestos inspection dated**

◉ **2. This building contains asbestos as follows: (Specify locations)**

Ceiling Tile/Panels/Areas Above the Ceiling:

Floor Materials: 9X9 WHITE FLOOR TILE & MASTIC

Wall Board or Panels:

Surfacing Material:

Thermal Insulation: PIPE INSULATION - MECHANICAL ROOM (PARTIALLY REMOVED)

Other: (Describe) SOFFIT PANELS

Part IV. ASBESTOS MANAGEMENT CERTIFICATION

Asbestos Management Planner (Signature)	Accreditation Number	Date	Phone Number
Terry F. Russell, Sr. (Sjm)	20641	8/11/08	919-715-9344

Part V. ACKNOWLEDGMENT OF NOTIFICATION

Name (Please Print Clearly)	Company	Company Phone Number

Signature	Date

NOTE:

)O NOT remove any tags or labels from items labeled as ACM. If you must post any warning labels in association with your work, please remove immediately upon completion of work. If your work requires lockout/tagout of energy sources, please make sure the facility coordinator, for this facility, is fully aware of the extent of your activities. Your safety and health, while visiting our facility, is our paramount concern.

North Carolina Department of Transportation

FACILITY ASBESTOS NOTIFICATION

Form 1001S

Effective 8-1-96
Revised 8-21-96
Revised 1-23-03

art I. NOTIFICATION

The North Carolina Department of Transportation is hereby notifying you that the building listed below has been tested for the presence of asbestos-containing materials (ACM). A survey report is on file and may be requested by contacting the NC DOT Asbestos Program Manager at (919) 715-9344.

Part II. FACILITY INFORMATION

1. Facility Name/Identification Number:

DIVISION OFFICE STORAGE BUILDING - FA# 84-05-02

2. Facility Address:

DIVISION ENGINEER'S OFFICE COMPLEX
716 WEST MAINT STREET - ALBEMARLE, NC

Part III. ASBESTOS STATUS:

(●) **1. No asbestos containing building material (ACBM) was located by asbestos inspection dated APRIL 22, 1997**

( ) **2. This building contains asbestos as follows: (Specify locations)**

Ceiling Tile/Panels/Areas Above the Ceiling: _____

Floor Materials: _____

Wall Board or Panels: _____

Surfacing Material: _____

Thermal Insulation: _____

Other: (Describe) _____

Part IV. ASBESTOS MANAGEMENT CERTIFICATION

Asbestos Management Planner (Signature)	Accreditation Number	Date	Phone Number
Terry F. Russell, Sr. (sym)	20641	7/17/08	919-715-9344

Part V. ACKNOWLEDGMENT OF NOTIFICATION

Name (Please Print Clearly)	Company	Company Phone Number

Signature	Date

NOTE:

DO NOT remove any tags or labels from items labeled as ACM. If you must post any warning labels in association with your work, please remove immediately upon completion of work. If your work requires lockout/tagout of energy sources, please make sure the facility coordinator, for this facility, is fully aware of the extent of your activities. Your safety and health, while visiting our facility, is our paramount concern.